

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

75 Hawthorne Street San Francisco, CA 94105

> CERTIFIED MAIL NO. Z 331 743 075 RETURN RECEIPT REQUESTED

June 1, 2000 In reply, refer to WST-3-1

Mr. Albert Toy Crystal Technology, Inc. 1040 East Meadow Circle Palo Alto, CA 94303

Dear Mr. Toy,

On January 13, 2000, a Compliance Evaluation hazardous waste investigation was conducted by representatives of the United States Environmental Protection Agency (U.S. EPA) at Crystal Technology, Inc. located in Palo Alto, CA, U.S. EPA Identification Number CAD 980 882 369. During the course of this investigation, information was gathered in accordance with Section 3007 of the Resource Conservation and Recovery Act ("RCRA"), as amended [42] U.S.C. 6927]. A copy of the investigation report is enclosed for your information and response. The report describes conditions at the facility at the time of the investigation, and identifies one area of noncompliance with RCRA regulations and potential violations of the California authorized program under RCRA Subtitle C. Any omissions in the report shall not be construed as a determination of compliance with all applicable regulations.

By copy of this letter, EPA is providing the State of California with notice of the referenced violations of Subtitle C of RCRA. The State of California may notify EPA of its intent to assume or decline responsibility to take such action to resolve the referenced violation. U.S. EPA routinely provides copies of investigation reports to State agencies, and upon request, to the public. Such releases are handled according to the Freedom of Information Act regulations (40 CFR Part 2). If you believe this report contains privileged or confidential information, you may make a claim within fifteen (15) calender days from the date of this letter. 

J.S. EPA will construe your failure to furnish a timely claim as a waiver of the confidentiality claim.

If you have questions related to technical aspects of the investigation report or this letter, please contact Cameron McDonald at (415) 744-2124.

Frances Schultz, Chief RCRA Enforcement Section

Travecs Schus

Enclosure

cc: Charles McLaughlin, CAL EPA, DTSC



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION IX

75 Hawthorne Street San Francisco, CA 94105

# RCRA COMPLIANCE EVALUATION INSPECTION REPORT WASTE MANAGEMENT DIVISION RCRA ENFORCEMENT SECTION

Purpose:

RCRA Compliance Evaluation Inspection

Facility:

Crystal Technology, Inc.

Location:

1040 East Meadow Circle

Palo Alto, CA 94303

Mailing Address:

same as above

**EPA ID Number:** 

CAD 980882369

Date of Inspection:

January 12, 2000

**EPA** Representatives:

Cameron McDonald

Environmental Scientist

(415) 744-2124

Roberto Rodriguez

Environmental Protection Specialist

Facility Representatives:

Albert Toy

Environmental Health and Safety Manager

Report Prepared by:

Cameron McDonald

Report Date:

March 24, 2000

#### INTRODUCTION

On, January 13, 2000, Cameron McDonald and Roberto Rodriguez, representing the United States Environmental Protection Agency (EPA) conducted an unannounced Compliance Evaluation Inspection (CEI) at the Crystal Technology, Inc. facility ("Crystal Technology" or "the facility") (EPA ID# CAD 980 882 369) located at 1040 East Meadow Circle, Palo Alto, CA.

The purpose of the inspection was to determine the facility's compliance with applicable state and federal environmental statutes and regulations, and in particular, the Resource Conservation and Recovery Act (RCRA), as amended, the regulations provided in the Code of Federal Regulations (CFR), Chapter 40, Parts 261-265, 268, and 279, the California Code Regulations (CCR), Title 22, Division 4.5 and the California Health and Safety Code, Division 20.

#### FACILITY BACKGROUND

Crystal Technology began operation in 1965 as a manufacturer of single oxide crystals and the selected optical components based on these crystals. The single oxide crystals are used in laser optics and wireless communications products.

The facility consists of three buildings: 1035 East Meadow Circle, 1040 East Meadow Circle, and 1051 East Meadow Circle. The 1035 and 1051 buildings operate 24 hours a day, seven days a week. The 1040 building, which consists mainly of the administrative offices, operates for ten hours a day, Monday through Friday (Attachment 1).

The personnel consists of approximately 200 employees. However, Crystal Technology hires temporary labor at times of high production, so the actual number of employees can fluctuate.

### **REGULATORY HISTORY**

Crystal Technology submitted a Notification of Hazardous Waste Activity in April 1984 stating that they generate EPA Hazardous Waste Codes U002 (2-propanone), U134 (hydrogen fluoride), U154 (methanol), U226 (1,1,1-trichloroethane), and U228 (trichloroethylene) (Attachment 2).

According to the 1995 Biennial Report, Crystal Technology shipped 28 tons of the following EPA hazardous waste codes: D001, D002, D011, D021, D040, F002, F003, and F005. According to the 1997 Biennial Report, Crystal Technology shipped 30 tons of the following EPA hazardous waste codes: D001, D002, D013, D021, F001, F003, and F005 (Attachment 3).

The facility was inspected by the California Department of Health Services' Toxic Substances Control Division (CADHS TSCD) in March 1989 and by the California Environmental Protection Agency's Department of Toxic Substances Control (CAL EPA DTSC) in April 1991. Both state inspections found numerous violations, including: storage in excess of 90 days without a permit, manifests unavailable or incorrectly filled out, no Land Disposal Restriction notifications, inadequate training plan, insufficient training records, inadequate contingency plan, and inadequate labeling of containers (including containers not marked with accumulation start dates, or with the words "Hazardous Waste," or with the composition and physical state of the waste, or the particular hazardous properties of the waste, and without the name and address of the generator). As a result of these findings, DTSC initiated a formal enforcement action

against Crystal Technology.

#### WALK-THROUGH INSPECTION

After providing credentials, the inspectors contacted Mr. Albert Toy (Environmental Health and Safety Manager). The inspectors explained the purpose of the inspection and what would be covered. Before touring the facility, the inspectors presented a Small Business Regulatory Enforcement and Fairness Act (SBREFA) handout to the facility representative. The inspectors also informed the facility representative of his right to claim the privilege of confidential business information during the inspection or after receipt of the inspection report. Photographs were taken with the facility's acquiescence throughout the inspection.

### Building 1051

The inspection began at Building 1051 where the materials to grow the crystals are chemically prepared. The base materials for the lithium niobate (LN) crystals are niobate pentoxide and lithium carbonate. These chemicals, in a powder form, are mixed together and heated or "charged" in a furnace to about 1350 degrees Centigrade. After charging, the lithium niobate forms are a columnar shape that is referred to as a "boule."

In the Crucible Preparation room the EPA inspectors observed under a sink labeled the Acid sink, three polyethylene jugs of three sizes (5-gallon, 3-gallon and 2.5-gallon). None of the jugs were labeled and all were empty. According to the facility representative, waste is deposited in these jugs (Attachment 4, Photo 1).

Under an adjoining sink used for solvent rinse the EPA inspectors observed four 2.5-gallon polyethylene jugs. One of the jugs was two-thirds full of waste solvent. This jug had a hazardous waste tag, but no accumulation start date. According to the facility representative, the jugs are emptied weekly. There were no markings on the jugs to confirm this statement (Attachment 4, Photo 2).

In another room in Building 1051 the LN boules are prepared for testing for quality assurance alignment. The alignment dictates the optical properties of that particular boule. A small amount of platinum ink is painted on the bottom of the boule and the boule is placed in a drying oven to bake the platinum ink until it sets. Crystal Technology handles the platinum waste as hazardous waste. The platinum wastes from the ink preparation process are placed in a 30-gallon red can located in this room. The can is labeled "Empty every night."

Outside of Building 1051 is one of the two outside hazardous waste storage areas. This storage area consists of two locked sheds, one for solvents and the other for acids. The hazardous waste storage area was equipped with spill response equipment contained in the acid storage shed, a shower and eyewash, and an emergency phone (Attachment 4, Photos 3 and 4).

In the solvent storage area there were three drums of solvent. All of the drums had hazardous waste labels with accumulation start dates. The acid storage area contained four drums. All of the drums had hazardous waste labels with accumulation start dates. Drums in both sheds are placed over a contained sump. According to the facility representative, the sumps are drained and cleaned, usually during the winter. Any water discovered in the sumps is tested for

contamination, and if no contamination is found, it is then released to the storm drains.

### **Building 1035**

In Building 1035, the LN boules undergo preparation for precision sawing into wafers. The facility has several rooms in this building dedicated to sectioning the boules into wafers.

Chemical compounds used in this building include:

- 1. the coolant used in the sawing equipment, Challenge 400 NT,
- 2. Valtron SP 2500 a low sodium cleaner, which is disposed of as a corrosive hazardous waste,
- 3. Syton HT50 a colloidal silica (MSDS in Attachment 3),
- 4. Aluminum oxide an abrasive, and,
- 5. Hydrofluoric acid

The EPA inspectors observed a three-sink cleaning area built into one wall of Building 1035. The first sink contained about three gallons of 48% hydrofluoric acid (HF) and the other two sinks contained deionized water rinses. According to the facility representative, the HF acid is poured into the sink by the maintenance crew and pumped out about once a week. Next to the three-sink cleaning area were a fully automated eyewash and shower and an emergency spill kit.

There was also another HF acid cleaning section that was placed more centrally in the building. This section is used for final polishing of the LN wafer. This area was cordoned off with "CAUTION" signs. The first sink uses 10% HF acid and is replenished once a day. The EPA inspectors observed a locker nearby which contained additional spill equipment.

#### Building 1040

This building is used for assembly and administrative operations. Small amounts of solvents, such as acetone and methanol, are used to clean parts. The solvents are usually applied with Q-Tips<sup>®</sup> or wipes. A red 20-gallon can sits under or near each workbench (Attachment 4, Photo 5). The cans are labeled "Empty every night." No accumulation start date was noted on any of the cans.

Outside of Building 1040, is the second hazardous waste storage area that consists of one locked shed. Drums in the shed are placed over a contained sump. The hazardous waste storage area was equipped with spill response equipment contained in the storage shed, a shower and eyewash, a fire extinguisher, and an emergency phone (Attachment 4, Photo 6).

Next to the hazardous waste storage area is an acid neutralization system. According to the facility representative, this system treats on average 1.5 gallons of 10% hydrofluoric acid and 8 gallons of 100% acetic acid a week. The system is triple-chambered and uses 30% sodium hydroxide for neutralization. The facility representative pointed out three pH meters on the instrumentation and a fourth pH meter stationed before final discharge to the sewer. The third pH meter on the instrumentation read a pH of 7 at the time of the inspection.

Crystal Technology, Inc. CAD 980 882 369 January 13, 2000

### RECORD REVIEW

The EPA inspectors reviewed and found adequate the following documents:

- Manifests and Land Disposal Restrictions (LDRs) from the years 1996 through 1999
- Contingency Plan
- Preparation and Prevention Plan
- Wastewater Discharge Permit
- Waste Inspection Logs
- 1997 Biennial Report. The inspectors requested a copy of the 1997 Biennial Report.
- Training Plan and Records. All chemical handlers are Emergency Response Team (ERT) members.

### LIST OF ATTACHMENTS

- 1. Diagram of the Crystal Technology Facility
- 2. Notice of Hazardous Waste Activity
- 3. 1997 Biennial Report
- 4. Site Photographs
- 5. MSDS of Chemicals used at Crystal Technology, Inc.

### POTENTIAL VIOLATIONS

Accumulation Time 22 CCR 66262.34(e)(1)(C) [40 CFR 262.34(c)(1)]

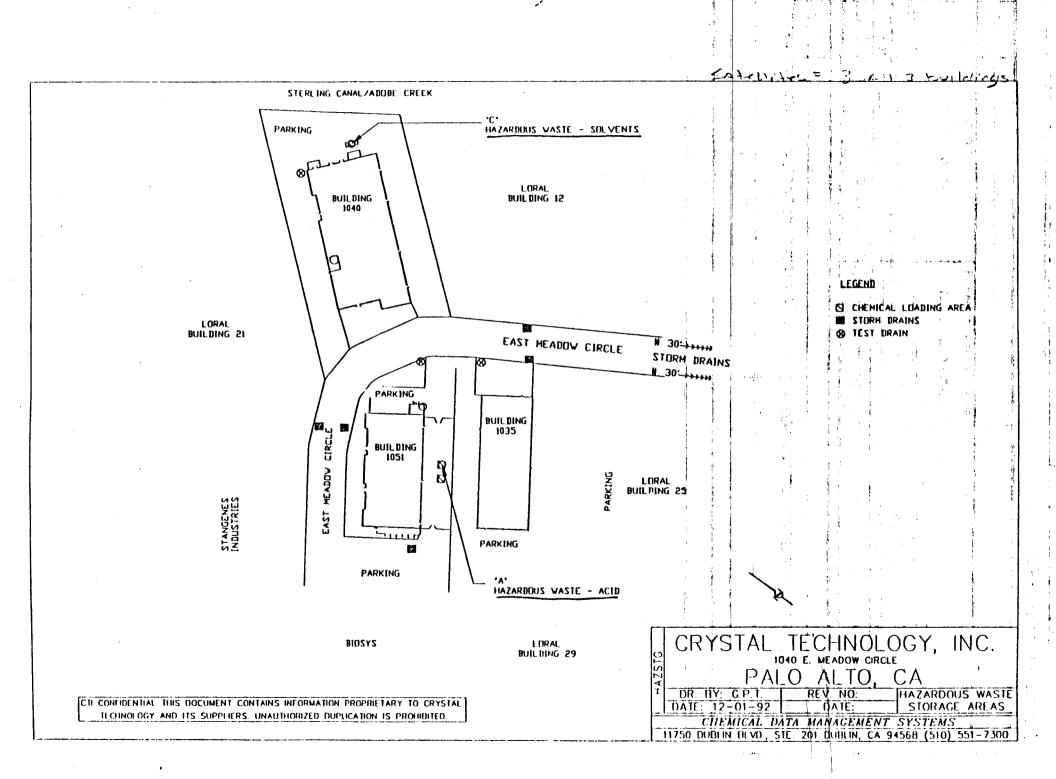
A generator may accumulate as much as 55 gallons of hazardous waste, one quart of acutely hazardous waste (listed in section 66261.33(e)) or one quart of extremely hazardous waste at or near any point of generation, without a permit or grant of interim status, without complying with subsections (a), (b) and (c) of this section, if all of the following requirements are met with respect to this waste: The initial date of waste accumulation is clearly marked and visible for inspection on each container used for accumulation of hazardous waste.

In the Crucible Preparation room in Building 1051, one 2.5-gallon polyethylene jug was two-thirds full of waste solvent. This jug had a hazardous waste tag, but no accumulation start date.

### **ATTACHMENT 1**

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DIAGRAM OF THE CRYSTAL TECHNOLOGY FACILITY



## ATTACHMENT 2

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NOTICE OF HAZARDOUS WASTE ACTIVITY

& EPA	NOTIFICATION OF HAZARDOUS WASTE ACTIVITY INSTRUCTIONS: If you received a preprinted
INSTALLA- TION'S EPA 1.D. NO.	label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is
I. STALLATION	complete and correct, leave items I, II, and II below blank, If you did not receive a preprinted
INSTALLA-	label, complete all items. "Installation" means of single site where hazardous waste is generated
II. MAILING	PLEASE PLACE LABEL IN THIS SPACE treated, stored and/or disposed of, or a transporter's principal place of business. Please refe
	to the INSTRUCTIONS FOR FILING NOTIFI
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E. CHARACTERISTICS OF NON-LISTED HAZA hazardous wastes your installation handles. (Se	ARDOUS WASTES. Mark "X" in the e 40 CFR Parts 261.21 - 261.24.)	e boxes corresponding to the ch	aracter stics of non-listed
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LD. - FOR OFFICIAL USE ONLY

EPA Form 8700-12 (6-80) REVERSE

## ATTACHMENT 3

1997 BIENNIAL REPORT

EPA ID NO: <u>CAD980882369</u>



## U.S. ENVIRONMENTAL PROTECTION AGENCY

1997 Hazardous Waste Report

# IDENTIFICATION AND CERTIFICATION

Instructions: Please see the detailed instructions beginning on page 7 of the instructions and forms booklet before completing this form. In addition, the page number for the instructions specific to each section is provided below.

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Sec. I - Site name and location address. Instructions page	e 7. · · · · · · · · · · ·	************ <b>.</b>	
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C. Site/company name	D. Ha	s the site name associated w	ith this EPA ID changed since 199
CRYSTAL TECHNOLOGY, INC.	:	1 Yes	X 2 No
E. Street name and number. If not applicable, enter industrial	park, building name o		
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F. City, town, village	G. State	H. Zip Code	
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Sec. II Mailing address of site. Instructions page 7.			
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B. Number and street name of mailing address			
1040 East Meadow Circle			
C. City, town, village	D. State	E. Zip Code	
Palo Alto	CA	94303	
Sec. III Name, title, and telephone number of the person w	rho should be contact	ed if questions arise regardin	g this report. Instructions page 7
A. Last Name First Name M.I.	B. Title		C. Telephone Number
Toy, Albert W.	EH&S Manag	er	650 354-0165 Ext.
"I certify under penalty of law that this document and all designed to assure that qualified personnel properly gat who manage the system, or those persons directly resp knowledge and belief, true, accurate, and complete. I a and Recovery Act for submitting false information, inclu-	her and evaluate the info onsible for gathering the m aware that there are s	rmation submitted. Based on minformation, the information sub gnificant penalties under Section	ny inquiry of the person or persons omitted is, to the best of my on 3006 of the Resource Conservatio
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Page 2 OF

EPA ID NO: CAD980882369

- 34 Bills



FORM GM

# U. S. ENVIRONMENTAL PROTECTION AGENCY

1997 HAZARDOUS WASTE REPORT

# WASTE GENERATION AND MANAGEMENT

DO02  D. SIC code (page 13) 3679	waste codes (page 12) NA NA E. Origin code (page 13)	NA NA	C. State hazardous waste CA 122	codes (page 13)	
(page 13)			CA 122		
	System type	F. Source code (page 14) A03	G. Point of measurement (p. 14)	H. Form.code (page 14) B110	I. RCRA-radioactive mixed (page 14) 2
A. Quanti	ty generated in 1997 (page 1 165.00	5) B. UOM (page 15) 5 Density 1.40 ( ) 1 lbs/gal (X) 2 sg	dispose on site, recyc sewer/POTW? (page f	IUE TO ON-SITE PROCES	4
	ss system type Quan	tity treated, disposed, or ad on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or n site in 1997 (page 16
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Site 2 E. EPA I <b>s</b> hip		C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
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Comments:					

EPA ID NO: <u>CAD980882369</u>



FORM **GM** 

# U. S. ENVIRONMENTAL PROTECTION AGENCY

1997 HAZARDOUS WASTE REPORT

# WASTE GENERATION AND MANAGEMENT

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Sec_1 Mixed no	lescription (page 12) on-halogenated solvents 1-10%), ethanol (0-1%)	from crystal cleaning ope and N-butyl acetate (0-1%	rations; mixture of acetor 6)	ne (50-75%), methanol (	5-20%), isopropyl
	raste codes (page 12) D021 F003	F005 NA	C. State hazardous waste CA 212	codes (page 13)	
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A05	G. Point of measurement (p. 14) 2	H. Form code (page 14) B203	i. RCRA-radioactive mixed (page 14) 2
A. Quantity	y generated in 1997 (page 1 1,645.00	15) B. UOM (page 15) 5 Density 0.80 ( ) 1 lbs/gal ( X ) 2 sg	sewer/POTW? (page 1	le on site, or discharge to 5) IUE TO ON-SITE PROCES	a
ON-SITE PROCESS S On-site proces (page	s system type Quar	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or n site in 1997 (page 16)
	y of this waste shipped off 1 Yes (CONTINUE TO BOX	site in 1997 for treatment, d B) 2 No (FOR	isposal, or recycling? (page M IS COMPLETE)	e 17)	
<b>s</b> hipp	O No. of facility waste was sed to (page 17) CAD002452657	C. System type shipped to (page 17) M021	D. Off-site availability code (page 17)	E. Total quantity shippe	ed in 1997 (page 17)
Site 2 B. EPA II	No. of facility waste was sed to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
f .	No. of facility waste was ped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	ed in 1997 (page 17)
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Comments:					
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EPA Form 8-70-18A	/B (Revised (07-97))				Fage∠

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SITE NAME: CRYSTAL TECHNOLOGY, INC.

A. Waste description (page 12)

EPA ID NO: CAD980882369



## U. S. ENVIRONMENTAL PROTECTION AGENCY

FORM GM

1997 HAZARDOUS WASTE REPORT

## WASTE GENERATION AND MANAGEMENT

	Sec. J	mixed non-halogenated solvent/w alcohol (0-1%), methanol (0-1%)	vastewater rinse from rins and dye (0-1%)	e of solvent containers; v	vater (96-100%), acetor	ne (0-1%), isopropyl
(page 13) 3679  System type  (page 14) A04  The measurement (p. 14) B101  The process system type  Quantity treated, disposed, or recycled on site in 1997 (page 16)  Sec. II  A. Was any of this waste shipped off site in 1997 (page 16)  Site 1  B. EPA ID No. of facility waste was shipped to (page 17)  CA-D0Ce452657  Site 2  B. EPA ID No. of facility waste was shipped to (page 17)  NA  Site 3  B. EPA ID No. of facility waste was shipped to (page 17)  NA  Site 3  B. EPA ID No. of facility waste was shipped to (page 17)  NA  C. System type shipped to (page 17)  NA  D. Off-site availability code (page 17)  NA  E. Total quantity shipped in 1997 (page 17)  Site 2  B. EPA ID No. of facility waste was shipped to (page 17)  NA  C. System type shipped to (page 17)  NA  C. System type shipped to (page 17)  C. Did site availability code (page 17)  C. Diff-site availability code (p			NA NA		codes (page 13)	
Sec: II 405.00    Site 1   Sec. III   A. Was any of this waste shipped off site in 1997 (page 16)   A. Was any of this waste shipped to (page 17)   CADOC9452657   M021   Site 2   B. EPA ID No. of facility waste was shipped to (page 17)   NA      Site 3   B. EPA ID No. of facility waste was shipped to (page 17)   NA      Site 3   B. EPA ID No. of facility waste was shipped to (page 17)   NA      Site 4   Site 9   Site 9   Site 10   S	(page 1	3) 1 1	(page 14)		(page 14)	i. RCRA-radioactive mixed (page 14) 2
On-site process system type (page 16)  A. Was any of this waste shipped off site in 1997 (page 16)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III  A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Site 1  B. EPA ID No. of facility waste was shipped to (page 17)  NA  C. System type shipped to (page 17)  NA  C. System type shipped to (page 17)  NA  D. Off-site availability code (page 17)  Code (pag			5 Density 1.00	dispose on site, recyc sewer/POTW? (page 1 1 Yes (CONTIN	le on site, or discharge to 15) IUE TO ON-SITE PROCES	• 1
Site 1  B. EPA ID No. of facility waste was shipped to (page 17) CADOC9452657  Site 2  B. EPA ID No. of facility waste was shipped to (page 17) NA  Site 3  B. EPA ID No. of facility waste was shipped to (page 17) NA  C. System type shipped to (page 17) MO21  D. Off-site availability code (page 17) C. System type shipped to (page 17) Shipped to (page 17) NA  C. System type shipped to (page 17) Shipped to (page 17) NA  C. System type shipped to (page 17) NA  C. System type shipped to (page 17) NA  C. System type shipped to (page 17) NA  D. Off-site availability code (page 17) Code (page		e process system type Quai		On-site process sys	tern type Quantity	
shipped to (page 17) C4-D009452657  Site 2  B. EPA ID No. of facility waste was shipped to (page 17) NA  Site 3  B. EPA ID No. of facility waste was shipped to (page 17) NA  C. System type shipped to (page 17) NA	Sec_III				e 17)	
Site 2 B. EPA ID No. of facility waste was shipped to (page 17) NA Site 3 B. EPA ID No. of facility waste was shipped to (page 17) NA C. System type shipped to (page 17) NA C. System type shipped to (page 17) C. System type shipped in 1997 (page 17) C. System type shipped to (page 17) C. System type shipped in 1997 (page 17)	Site 1	shippec to (page 17)	shipped to (page 17)			
Site 3 B. EPA ID No. of facility waste was Shipped to (page 17) shipped to (page 17) shipped to (page 17) NA  D. Off-site availability E. Total quantity shipped in 1997 (page 17) code (page 17)	Site 2	B. EPA ID No. of facility waste was shipped to (page 17)	C. System type		4	
Comments:	Site 3	B. EPA ID No. of facility waste was shipped to (page 17)			E. Total quantity shipp	ed in 1997 (page 17)
	comments:					

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EPA ID NO: CAD980882369



FORM **GM** 

# U. S. ENVIRONMENTAL PROTECTION AGENCY

1997 HAZARDOUS WASTE REPORT

# WASTE GENERATION AND MANAGEMENT

Commen	ts:							7.7		
Site 3		D No. of fac oed to (pag NA		C. System shippe	type d to (page 17)	D. Off-site avai code (page		E. Total qua	ntity shipped	d in 1997 (page 17)
Site 2	shipp	ped to (pag NA			d to (page 17)	D. Off-site avai code (page	17)			d in 1997 (page 17)
Site 1	<b>sh</b> ip <sub>l</sub>	oed to (pag CAD0094	52657		d to (page 17) //121	D. Off-site avai code (page 1	17)		3,145	
Sec. III		_	iste shipped off ITINUE TO BOX			lisposal, or recyc IM IS COMPLETE				
								-		
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				( )11b	1.10 s/gal (X)2 sg	1 ==	S (CONTINE (SKIP TO	UE TO ON-SI SEC. III)	TE PROCESS	SYSTEM 1)
Sec. II		3,145	.00		5 Density	sewer/POTV	W? (page 1		_	
• <b>J</b> igo di	A. Quantit	y generate	d in 1997 (page :	15) B. UOM	(page 15)	C. Did this site	do any of t	he following	o this waste	treat on site,
D. SIC co (page 30			code (page 13) 1 stem type	F. Source (page		G. Point of measureme	nt (p. 14)	H. Form cod (page 14) B1		I. RCRA-radioactiv mixed (page 14) 2
-	002	NA	NA	NA	NA	CA 7				· ·
	nazardous v		· (page se)			C. State hazard	JUUS WESIE		131	

FORM GM		-			
SITE NAME: CRYSTAL TE	ECHNOLOGY,	INC.	South of States	U. S. ENVIRONN PROTECTION A	
EPA ID NO: CAD9808823	<u>69</u>		FORM 199	97 HAZARDOUS WAS	TE REPORT
			GM	WASTE GENER AND MANAGE	
Instructions: Please see the addition, the page number for	detailed instruction rinstructions spe	ons beginning on page 11 cific to each box is provide	of the instructions and form led in parentheses.	ms booklet before comple	ting this form. In
A. Waste description Sec. 1 Mixed hydrochlor nitric acid (1-10%)	ic acid and nitric	acid aqueos waste from	boule etching; water (80-	-99%), hydrochloric acid	(1-10%) and/or
B. EPA hazardous waste code D002 NA	es (page 12) NA	NA NA	C. State hazardous waste CA 791	codes (page 13)	
(page 13)	n code (page 13) 1 ystem type	F. Source code (page 14) A27	G. Point of measurement (p. 14)	H. Form code (page 14) B105	I. RCRA-radioactive mixed (page 14) 2
Sec. II 495		5) B. UOM (page 15) 5 Density 1.10 ( } 1 lbs/gal ( X ) 2 sg	dispose on site, recyclesewer/POTW? (page 1	IUE TO ON-SITE PROCESS	1
On-site PROCESS SYSTEM On-site process system (page 16)	type Quan	tity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tern type Quantity	treated, disposed, or site in 1997 (page 16)
I	vaste shipped off i		isposal, or recycling? (pag M IS COMPLETE)	e 17)	
Site 1 B. EPA ID No. of fa shipped to (pa CAD009	ge 17)	C. System type shipped to (page 17) M121	D. Off-site availability code (page 17)	E. Total quantity shipped	
Site 2 B. EPA ID No. of for shipped to (pa	acility waste was ge 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
Site 3 B. EPA ID No. of fa shipped to (pa N	acility waste was ge 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped	d in 1997 (page 17)
Comments:					

EPA Form 8700-13A/B (Revisea (07-97))

U. S. ENVIRONMENTAL PROTECTION AGENCY SITE NAME: CRYSTAL TECHNOLOGY, INC. 1997 HAZARDOUS WASTE REPORT EPA ID NO: CAD980882369 WASTE GENERATION AND MANAGEMENT Instructions: Please see the detailed instructions beginning on page 11 of the instructions and forms booklet before completing this form. In addition, the page number for instructions specific to each box is provided in parentheses. Waste description (page 12) Spent vapor degreaser fluid (HCFC) used for cleaning crystals; Dichlorofluroethane (90-99%), methanol (0-10%), oil (0-1%) Sec. I and water (0-1%). B. EPA hazardous waste codes (page 12) C. State hazardous waste codes (page 13) F001 F003 NA NA NA **CA 741** D. SIC code G. Point of E. Origin code (page 13) I. RCRA-radioactive F. Source code H. Form code measurement (p. 14) (page 13) (page 14) (page 14) mixed (page 14) 3679 System type 1 B202 2 A. Quantity generated in 1997 (page 15) B. UOM (page 15) C. Did this site do any of the following to this waste: treat on site, Sec. II dispose on site, recycle on site, or discharge to a 110.00 Density sewer/POTW? (page 15) 1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1) 1.30 ( ) 1 lbs/gal (X) 2 sg 2 No (SKIP TO SEC. III) ON-SITE PROCESS SYSTEM 1 ON-SITE PROCESS SYSTEM 2 On-site process system type On-site process system type Quantity treated, disposed, or Quantity treated, disposed, or (page 16) recycled on site in 1997 (page 16) (page 16) recycled on site in 1997 (page 16) A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17) Sec\_III X 1 Yes (CONTINUE TO BOX B) 2 No (FORM IS COMPLETE) ----B. EPA ID No. of facility waste was E. Total quantity shipped in 1997 (page 17) Site 1 C. System type D. Off-site availability shipped to (page 17) shipped to (page 17) code (page 17) CAD009452657 M021 Site 2 C. System type D. Off-site availability E. Total quantity shipped in 1997 (page 17) B. EPA ID No. of facility waste was shipped to (page 17) shipped to (page 17) code (page 17) B. EPA ID No. of facility waste was D. Off-site availability E. Total quantity shipped in 1997 (page 17) Site 3 C. System type shipped to (page 17) shipped to (page 17) code (page 17) comments:

EPA Form 8700-13A/B (Revised (07-97))

EPA ID NO: CAD980882369

A. Waste description (page 12)



# U. S. ENVIRONMENTAL PROTECTION AGENCY

RM

1997 HAZARDOUS WASTE REPORT

## WASTE GENERATION AND MANAGEMENT

F003	waste codes (page 12) NA NA	NA NA	C. State hazardous waste CA 352	codes (page 13)	
. SIC code (page 13) 3679	E. Ongin code (page 13) 1 System type	F. Source code (page 14) A19	G. Point of measurement (p. 14)	H. Form code (page 14) B409	I. RCRA-radioactive mixed (page 14) 2
A. Quanti	ty generated in 1997 (page 1	15) B. UOM (page 15) 1 Density NA	dispose on site, recyc sewer/POTW? (page 1	IUE TO ON-SITE PROCES	a
	ss system type Qua	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or in site in 1997 (page 16
ite 1 B. EPA	ny of this waste shipped off 1 Yes (CONTINUE TO BOX D No. of facility waste was ped to (page 17)	site in 1997 for treatment, or B) 2 No (FOR C. System type shipped to (page 17)	lisposal, or recycling? (pag RM IS COMPLETE)  D. Off-site availability code (page 17)	e 17)  E. Total quantity shippe	ed in 1957 (page 17)
ite 2 B. EPA i	CAD009452657 D No. of facility waste was ped to (page 17) NA	M043 C. System type shipped to (page 17)	D. Off-site availability code (page 17)	1 25 E. Total quantity shippe	
	D No. of facility waste was ped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	ed in 1997 (page 17)
ornments: Cotton wipes	and wood handle cotton swab	s used for hand wipe cleaning	of crystals.		

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EPA ID NO: CAD980882369



### U. S. ENVIRONMENTAL **PROTECTION AGENCY**

1997 HAZARDOUS WASTE REPORT

### **WASTE GENERATION AND MANAGEMENT**

	description (page 12) oric acid wastewater neu	tralization unit used for e	ching crystals, water (99	-100%) and hydrofluoric acid (0-1%).
B. EPA hazardous w D002	vaste codes (page 12) NA NA	NA NA	C. State hazardous waste CA 791	e codes (page 13)
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A27	G. Point of measurement (p. 14) - 1	H. Form code I. RCRA-radioact (page 14) mixed (page 14 B105 2
A. Quantit	y generated in 1997 (page 4.00	15) B. UOM (page 15) 5 Density 1.10 ( ) 1 lbs/gal ( X ) 2 sg	dispose on site, recyc sewer/POTW? (page	NUE TO ON-SITE PROCESS SYSTEM 1)
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	y of this waste shipped off 1 Yes (CONTINUE TO BOX	site in 1997 for treatment, d B) X 2 No (FOR	isposal, or recycling? (pag M IS COMPLETE)	e 17)
	O No. of facility waste was bed to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped in 1997 (page 17)
	D No. of facility waste was ped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped in 1997 (page 17
	D No. of facility waste was ped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped in 1997 (page 17)
Comments:				
	Jb (Revised (07-97))			Face

EPA ID NO: CAD980882369

A. Waste description (page 12) Lab packs of misc. chemicals.

B. EPA hazardous waste codes (page 12)



# PROTECTION AGENCY

U. S. ENVIRONMENTAL

1997 HAZARDOUS WASTE REPORT

### **WASTE GENERATION** AND MANAGEMENT

	vaste codes (page 12)		C. State hazardous waste	e codes (page 13)	
D001	D002 D018	NA NA	CA 551	CA 791	
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A99	G. Point of measurement (p. 14)	H. Form code (page 14) B001	I. RCRA-radioactive mixed (page 14) 2
A Quantit	y generated in 1997 (page 1 1,605.00	B. UOM (page 15) 1 Density NA	dispose on site, recyc sewer/POTW? (page	NUE TO ON-SITE PROCESS	2
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Sec. III X	1 Yes (CONTINUE TO BOX		M IS COMPLETE)		
shipp	D No. of facility waste was bed to (page 17) CAD009452657	C. System type shipped to (page 17) M137	D. Off-site availability code (page 17)	E. Total quantity shippe	
	D No. of facility waste was ped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
	D No. of facility waste was bed to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Comments: LAB PACK O	F MISC. CHEMICALS. DISF	POSAL METHODS VARIED			
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FORM GM

SITE NAME: CRYSTAL TECHNOLOGY, INC.

EPA ID NO: CAD980882369



U. S. ENVIRONMENTAL **PROTECTION AGENCY** 

1997 HAZARDOUS WASTE REPORT

## **WASTE GENERATION** AND MANAGEMENT

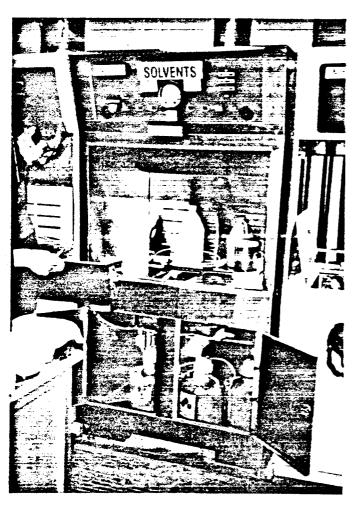
	description (page 12) um hydroxide and water u	sed to clean wafers.			-
B. EPA hazardous waste codes (page 12) D002 NA NA NA NA NA NA			C. State hazardous waste codes (page 13) CA 122		
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A03	G. Point of measurement (p. 14) - 1	H. Form code (page 14) B110	i. RCRA-radioactive mixed (page 14) 2
Sec. II	ty generated in 1997 (page 1 825.00	5) B. UOM (page 15) 5 Density 1.00 ( ) 1 lbs/gal (X) 2 sg	dispose on site, recyc sewer/POTW? (page 1	NUE TO ON-SITE PROCES	a
	ss system type Quar	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or n site in 1997 (page 16
	ny of this waste shipped off 1 Yes (CONTINUE TO BOX		isposal, or recycling? (pag M IS COMPLETE)	e 17)	
	D No. of facility waste was ped to (page 17) CAD009452657	C. System type shipped to (page 17) M121	D. Off-site availability code (page 17)	E. Total quantity shippe	
	D No. of facility waste was ped to (page 17)	C. System type. shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
	NA D No. of facility waste was ped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	ed in 1997 (page 17)
Comments:					
EPA Form 8700-137	ਪੇਲੇ (Revised (07-97))				Page 10

## **ATTACHMENT 4**

SITE PHOTOGRAPHS

## Compliance Evaluation Inspection Field Photograph Log Crystal Technology, Inc., Palo Alto, California

Photo 1 - Acid Sink - Empty poly jugs. No labels.



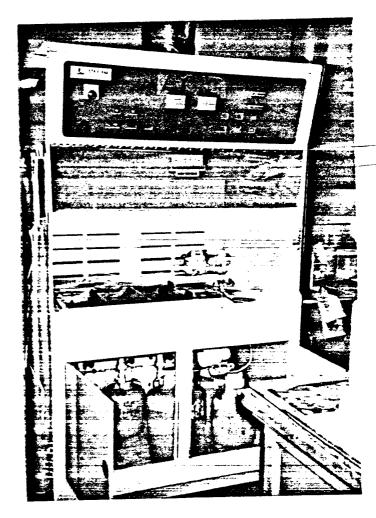


Photo 2 - Solvent Sink, 2.5-gallon jug of solvent, no accumulation start date.

### Compliance Evaluation Inspection Field Photograph Log Crystal Technology, Inc., Palo Alto, California



Photo 3 - Acid Storage Area - General photo of waste and products

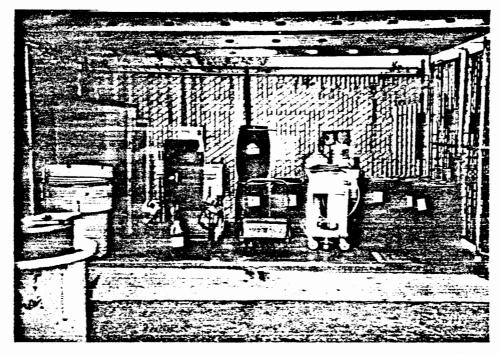


Photo 4 - Solvent Storage Area - General photo of waste and products

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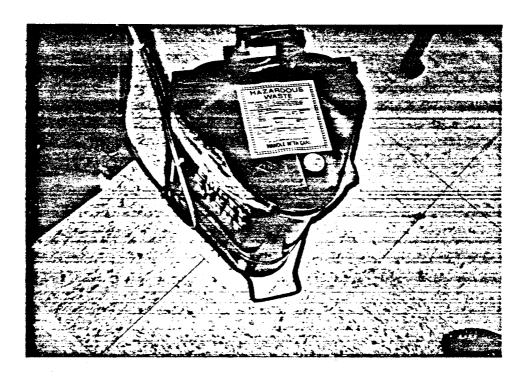


Photo 5 - For acetone and methanol wipes -labeled "Empty every night"

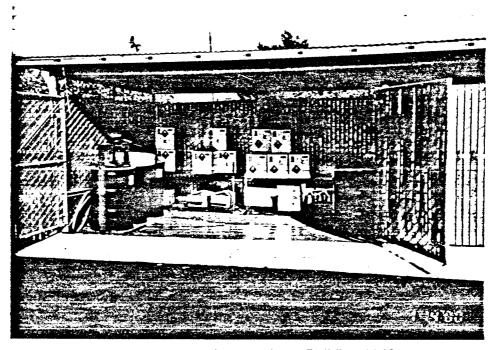


Photo 6 - Solvent Storage Area, Building 1040

## **ATTACHMENT 5**

MSDS OF CHEMICALS USED AT CRYSTAL TECHNOLOGY, INC.

## MONSANTO -- SYTON HT-50 COLLOIDAL SILICA MATERIAL SAFETY DATA SHEET

NSN: 803000N072712 Manufacturer's CAGE: 76541

Part No. Indicator: A

Part Number/Trade Name: SYTON HT-50 COLLOIDAL SILICA

#### General Information

Company's Name: MONSANTO CO

Company's Street: 800 NORTH LINDBERGH BLVD

Company's City: ST LOUIS Company's State: MO Company's Country: US Company's Zip Code: 63167

Company's Emerg Ph #: 314-694-1000;800-424-9300(CHEMTREC)

Company's Info Ph #: 315-737-7381 Record No. For Safety Entry: 001 Tot Safety Entries This Stk#: 001

Status: SMJ

Date MSDS Prepared: 01MAY90 Safety Data Review Date: 06SEP96 MSDS Serial Number: CBYTV

### Ingredients/Identity Information

Proprietary: NO

Ingredient: SILICA GEL; (SILICATE)
Ingredient Sequence Number: 01

Percent: 50

NIOSH (RTECS) Number: VV7310000

CAS Number: 112945-52-5
OSHA PEL: 6 MG/M3
ACGIH TLV: 10 MG/M3

#### Physical/Chemical Characteristics

Appearance And Odor: MILKY WHITE LIQUID, ODORLESS

Boiling Point: 212F,100C Melting Point: 32.0F,0.0C

Vapor Pressure (MM Hg/70 F): 24 @ 25C

Vapor Density (Air=1): SUP DAT Specific Gravity: 1.38 (H\*2O=1)

Evaporation Rate And Ref: <1 (BUTYL ACETATE=1)

Solubility In Water: 100%

pH: SUPDAT

### Fire and Explosion Hazard Data

Flash Point: WILL NOT BURN Lower Explosive Limit: N/A Upper Explosive Limit: N/A

Extinguishing Media: AS APPROPRIATE FOR COMBUSTIBLES IN AREA.

Special Fire Fighting Proc: Wear NIOSH approved SCBA And full protective equipment (FP N).

Unusual Fire And Expl Hazrds: NONE.

### **Reactivity Data**

Stability: YES

Cond To Avoid (Stability): NO KNOWN HAZARDOUS INSTABILITY. Materials To Avoid: NO KNOWN HAZARDOUS INCOMPATIBILITY.

Hazardous Decomp Products: NO KNOWN HAZARDOUS DECOMPOSITION.

Hazardous Poly Occur: NO

Conditions To Avoid (Poly): NOT RELEVANT.

#### **Health Hazard Data**

LD50-LC50 Mixture: LD50 (ORAL RAT): 7500 MG/KG.

Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO

Health Haz Acute And Chronic: Acute: breathing dried dust or spray mist may cause irritation. Repeated skin contact may irritate some people. Colloidal silica may cause mild, transient eye

irritation. Chronic: none specified by manufacturer.

Carcinogenicity - NTP: NO Carcinogenicity - IARC: NO Carcinogenicity - OSHA: NO

Explanation Carcinogenicity: NOT RELEVANT.

Signs/Symptoms Of Overexp: Eyes: mild eye irritation with discomfort, tearing or blurring of vision. Inhalation: temporary lung effects with cough. Discomfort, difficulty, or shortness of breath.

Med Cond Aggravated By Exp: Colloidal silica may cause a tissue response in the lung (pneumoconiosis) if mists or dusty dried particles are inhaled.

Emergency/First Aid Proc: Eyes: immediately flush with plenty of water for at least 15 minutes. Call md. Skin: flush with water. Ingestion: no specific intervention is indicated as compound is not likely to be remove to fresh air. Support breathing (give oxygen or artificial respiration) (FP N).

### Precautions for Safe Handling and Use

Steps If Matl Released/Spill: FLUSH WITH WATER TO CHEMICAL SEWER.

Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.

Waste Disposal Method: COMPLY W!TH FEDERAL, STATE AND LOCAL REGULATIONS. Precautions-Handling/Storing: Keep containers tightly closed. Store at temperatures above 2C (35F) to avoid irreversible precipitation of silica.

Other Precautions: NONE SPECIFIED BY MANUFACTURER.

#### **Control Measures**

Respiratory Protection: Use NIOSH Approved respirator where dust or spray mist occurs. Ventilation: local exhaust when sprayed to prevent overspray to atmosphere. Mechanical (general) ventilation: good general vent.

Protective Gloves: RUBBER GLOVES.

Eye Protection: ANSI APPRVD CHEM WORKERS GOGGS (FP N).

Other Protective Equipment: Emergency eyewash & deluge shower meeting ANSI design

criteria (FP N).

Work Hygienic Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust or

spray mist. Wash thoroughly after handling.

Suppl. Safety & Health Data: VAP DENS: VAPOR IS WATER. PH: 9.8-10.6 @ 25C.

## Transportation Data Disposal Data

### Label Data

Label Required: YES

Technical Review Date: 06SEP96

Label Date: 06SEP96 Label Status: G

Common Name: SYTON HT-50 COLLOIDAL SILICA

Chronic Hazard: NO Signal Word: CAUTION! Acute Health Hazard-Slight: Contact Hazard-Slight:

Fire Hazard-None:

Reactivity Hazard-None:

Special Hazard Precautions: Acute: breathing dried dust or spray mist may cause irritation. Repeated skin contact may irritate some people. Colloidal silica may cause mild, transient eye irritation. Chronic: none specified by manufacturer.

Protect Eye: Y Protect Skin: Y

Protect Respiratory: Y

Label Name: MONSANTO CO

Label Street: 800 NORTH LINDBERGH BLVD

Label City: ST LOUIS Label State: MO

Label Zip Code: 63167 Label Country: US

Label Emergency Number: 314-694-1000;800-424-9300(CHEMTREC)

### LIST OF ATTACHMENTS

- 1. Notice of Hazardous Waste Activity
- 2. 1997 Biennial Report
- 3. Diagram of the Crystal Technology Facility
- 4. Site Photographs
- 5. MSDS of Chemicals used at Crystal Technology, Inc.
- 6. Manifest Tracking Log

## ATTACHMENT 6

## MANIFEST TRACKING LOG

## Crystal Technology

## Manifest Tracking Log

/ Manifest #	Date Submitted	Action Date	Date Received	Comments
98834243	1/7/99	2/7/99	1/12/99	
98879603	1115199		1/21/99	
988:19486	1/21/99	2/2/199	1/26/99	
98879863	1/28/99	2/28/99	2/23/99	FAXED CO
9803767	1/8/99	2/8/99	2/1/99	
978_32838	2/4/99	3/4/97	2/11/99	
98832967	2/11/29	3/11/99	2/22/99	
98833104	418/99	3/18/99	2/24/99	
99291246	· ·	3/25/99	3/9/99	
9922/360		4/4/99	3/11/99	
99291560		4/11/99	3/19/99	
99290547	3/19/99	4/19/99	3/25/99	
98557171	3/19/99	4/19/99	3/25/99	LAB Pack
79290661	3/23/99	4/23/99	4/5/99	
90,292017	4/1/99	3/1/99	4/8/99	
99292152	•	5/8/99	1/14/99	
^	4/15/99	5/15/99	4/21/99	
9888480	4/22/97	5/22/99	4/27/97	
48037841	4/21/79	5/21/99	5/5/59	Ales tos
99134999		4/6/97	5/11/99	



CRYSTAL TECHNOLOGY CRUCIBLE PRÉPARATION ROOM 6-28-00



June 29, 2000

U.S. Environmental Protection Agency, Region IX Attn: Cameron McDonald 75 Hawthorne Street San Francisco, CA 94105

Ref. WST-3-1

Dear Ms. McDonald:

Regarding your 1/13/00 Compliance Evaluation Inspection (CEI) report of Crystal Technology, Inc. (CTI), enclosed, please find a recent photograph of the 2.5-gallon polyethylene jugs used to collect waste solvent (and water mix) in our 1051 Building Crucible Preparation Room.. It is difficult to see in the photograph, however, all required information is present, including the accumulation start date. A photocopy of the individual labels is attached.

Also, please note that all Crystal Technology employees that handle hazardous waste have undergone, or will shortly undergo, refresher training that highlights labeling and marking requirements.

Please feel free to contact me @ (650) 354-0165 if you have questions or if I may be of assistance. Thank you.

Sincerely,

Al Toy

Environment, Health & Safety Manager

EPA ID# CAD 980 882 369

Cc:

Charles McLaughlin, CAL EPA, DTSC

Georg Eberharter, President & CEO, Crystal Technology, Inc.

1040 East Meadow Circle
Palo Alto, California 94303-4230

Direct Line #

Direct Fax #

Corporate Offices:

(650) 856-7911

Corporate Fax:

(650) 424-8806

Sales Fax:

(650) 354-0173

www.crystaltechnology.com

#### HAZARDOUS WASTE

State and Federal Law Prohibits Improper Disposal. If found, contact the nearest police, or public safety authority or the U.S. Environmental Protection Agency or the California Department of Health Services.

Generator: CRYSTAL TECHNOLOGY INC 1040 EAST MEADOW CIRCLE PALO ALTO, CA 94303

EPA I.D. # CAD980882369 Phone: (650)856-7916

Manifest/Document#:

Accumulation Start Date:

CA HW Code: 212

Profile#: E 339531 Physical State: Liquid

Haz Properties: Flammable Liquid

Composition: ACETONE, ETHANOL, TOLUENE, METHANOL,

ISOPROPYL ALCOHOL

PSN: WASTE FLAMMABLE LIQUIDS, N.O.S. 3 UN1993 II

(ACETONE, METHANOL)

EPA Codes: D001 F003 F005

#### FIRE HAZARD FLASH POINTS HEALTH HAZARD 4 Below 73°F 4 Deadly 3 Below 100°F 3 Extreme danger 2 Above 100°F, 2 Hazardous not exceeding 200°F 1 Slightly hazardous 1 Above 200°F **O** Normal 0 Will not burn material **SPECIFIC** REACTIVITY **HAZARD** 4 May detonate **Oxidizer** OX ACID 3 Shock and heat may Acid detonate Alkali **ALK** 2 Violent chemical Corrosive COR change \* **Use NO WATER** 1 Unstable if heated Radioactive O Stable

**CONTAINS HAZARDOUS OR TOXIC WASTES** 

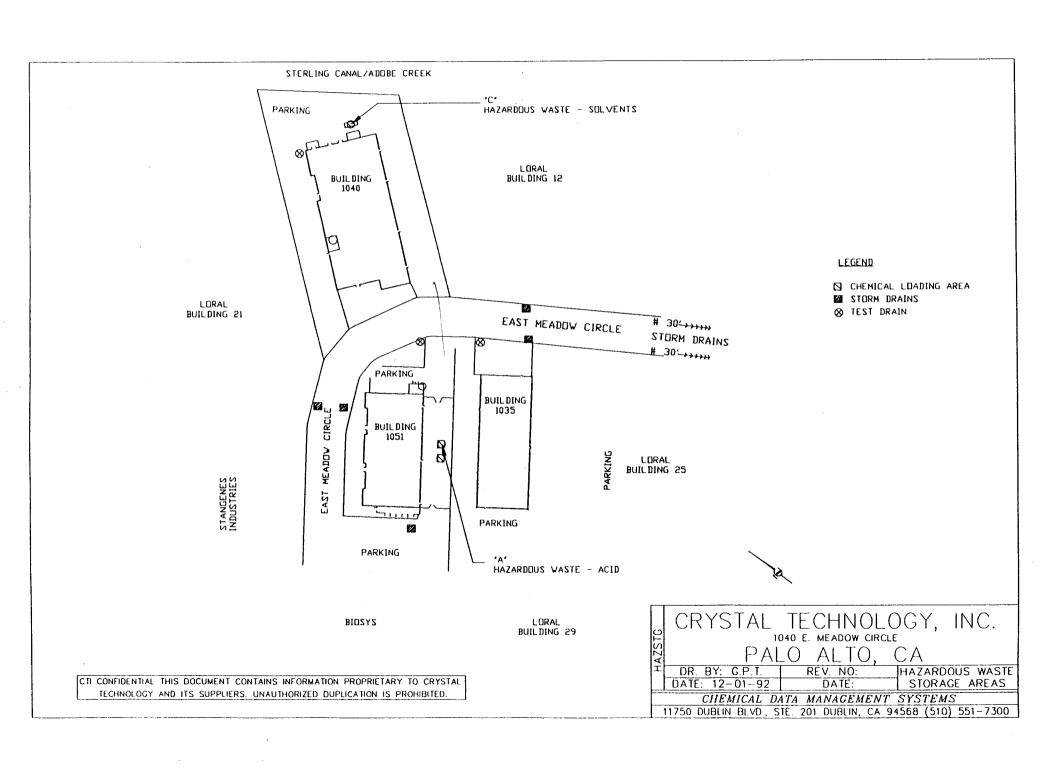
Lab Safety Supply Inc.



1040 East Meadow Circle Palo Alto, California 94303-4230



Illiminimillimidimill
U.S. Environmental Protection Agency, Region IX
Attn: Cameron McDonald
75 Hawthorne Street
San Francisco, CA 94105





### Department of Toxic Substances Control

Jesse R. Huff, Director 10151 Croydon Way, Suite 3 Sacramento, California 95827-2106 9

Gray Davis Governor January 19, 1999

Winston H. Hickox Secretary for Environmental Protection

Mr. Al Toy Crystal Technology, Incorporated 1040 East Meadow Circle Palo Alto, California 94303-4230

Dear Mr. Toy:

Thank you for using the Department of Toxic Substances Control's Consultative Services program. This information is provided as follow-up to our January 13, 1999 visit to the Crystal Technology facility. In general, the facility's hazardous waste management program appeared well organized and near compliance with applicable requirements.

Discussion during the visit generated a few questions and the walk-through of the facility produced a labeling issue. Those questions and the labeling issue are discussed below.

#### Walk-Through

Over-all, most containers used to accumulate hazardous waste were found to be labeled and closed as required by regulation. However, two small containers of lead contaminated wipes and other lead wastes located in room C7 were missing hazardous waste labels. All other containers in that area and other areas of the facility appeared to have appropriate label information. The spent solvent transfer cart appeared to be a safe and efficient way to transfer those wastes.

The dedicated hazardous waste accumulation area located in back of the 1040 East Meadow Circle building appeared clean and orderly. However, we did observe a two gallon metal container which apparently contained useable material (supposedly an oil) that had no label or other information on it. As mentioned during review of this area, all containers of hazardous waste as well as hazardous materials (such as useable products) are required to be labeled to ensure safe handling.

Review of hazardous waste activities at the buildings on the opposite side of the street did not reveal any compliance issues. We should mention, however, that if waste is not being added to the drum in the dedicated accumulation area, its lid, gasket, ring, and bolt should be in place. There are lever-lock drum rings available that allow easier opening and closing of drums.

#### Questions

# 1) Should additional action be taken to remove the generator identification number CAT080013899 from our records?

Upon review of our files we found that this number is inactive and no additional steps are needed to remove it from our records. It remains on our records as an inactive number.

#### 2) When are regulations on fluorescent light tubes scheduled to be in place?

Regulations concerning the management of fluorescent light tubes, high intensity discharge (HID) lamps, small batteries, pesticide containers, and perhaps other waste streams are being proposed within a package called "Universal Wastes." The Department is hoping to provide public notice concerning the proposal in March of this year. If all goes as planned, the regulations should be final by late summer. At this point, the proposed language would require that all fluorescent light tubes and HID lamps be recycled or managed as hazardous waste. You may want to review our website periodically for news on this regulatory package and others.

#### 3) What form of authorization is required to operate an onsite solvent distillation unit?

Section 25143.2(c)(2), Chapter 6.5, Division 20, Health and Safety Code (HSC) authorizes a generator to treat hazardous waste without a permit so long as the waste is handled properly prior to being recovered and the recovered material is reused onsite. The use of a distillation unit to recover spent solvents generated onsite and subsequently reused onsite is a good example of how this statute encourages recycling. A copy of HSC section 25143.2(c)(2) is provided below.

- (c) Except as otherwise provided in subdivision (e), any recyclable material may be recycled at a facility that is not authorized by the department pursuant to the applicable hazardous waste facilities permit requirements of Article 9 (commencing with Section 25200) if either of the following requirements is met:
- (1) The material is a petroleum refinery waste containing oil that is converted into petroleum coke at the same facility at which the waste was generated unless the resulting coke product would be identified as a hazardous waste under this chapter.
  - (2) The material meets all of the following conditions:
  - (A) The material is recycled and used at the same facility at which the material was generated.
- (B) The material is recycled within the applicable generator accumulation time limits specified in Section 25123.3 and the regulations adopted by the department pursuant to paragraph (1) of subdivision (b) of Section 25123.3.
- (C) The material is managed in accordance with all applicable requirements for generators of hazardous wastes under this chapter and regulations adopted by the department.

As provided in the statute above, the material or activity must also meet subdivision (e)

conditions. Review of subdivision (e) does not indicate any areas of concern in regard to onsite distillation units, but we have included a copy of subdivision (e) below for your information.

- (e) Notwithstanding subdivisions (b), (c), and (d), all of the following recyclable materials are hazardous wastes and subject to full regulation under this chapter, even if the recycling involves use, reuse, or return to the original process as described in subdivision (b), or even if the recycling involves activities or materials described in subdivisions (c) and (d):
- (1) Materials which are a RCRA hazardous waste, as defined in Section 25120.2, used in a manner constituting disposal, or used to produce products that are applied to the land including, but not limited to, materials used to produce a fertilizer, soil amendment, agricultural mineral, or an auxiliary soil and plant substance.
- (2) Materials which are a non-RCRA hazardous waste, as defined in Section 25117.9, and used in a manner constituting disposal or used to produce products that are applied to the land as a fertilizer, soil amendment, agricultural mineral, or an auxiliary soil and plant substance. The department may adopt regulations to exclude materials from regulation pursuant to this paragraph.
- (3) Materials burned for energy recovery, used to produce a fuel, or contained in fuels, except materials exempted under paragraph (1) of subdivision (c) or excluded under subparagraph (B), (C), or (D) of paragraph (2) of subdivision (d).
  - (4) Materials accumulated speculatively.
  - (5) Materials determined to be inherently wastelike pursuant to regulations adopted by the department.
- (6) Used or spent etchants, stripping solutions, and plating solutions that are transported to an offsite facility operated by a person other than the generator and which are either of the following:
  - (A) The etchants or solutions are no longer fit for their originally purchased or manufactured purpose.
- (B) If the etchants or solutions are reused, the generator and the user cannot document that they are used for their originally purchased or manufactured purpose without prior treatment.
  - (7) Used oil, as defined in subdivision (a) of Section 25250.1, unless one of the following applies:
- (A) The used oil is excluded under subparagraph (B) or (C) of paragraph (2) of subdivision (d), paragraph (4) of subdivision (d), subdivision (e) of Section 25250.1, Section 25250.2, or Section 25250.3, and is managed in accordance with the applicable requirements of Part 279 (commencing with Section 279.1) of Title 40 of the Code of Federal Regulations.
- (B) The used oil is used or reused on the site where it was generated or is excluded under paragraph (3) of subdivision (d), and is managed in accordance with the applicable requirements of Part 279 (commencing with Section 279.1) of Title 40 of the Code of Federal Regulations, and is not any of the following:
  - (I) Used in a manner constituting disposal or used to produce a product that is applied to land.
- (ii) Burned for energy recovery or used to produce a fuel unless the used oil is excluded under subparagraph (B) or (C) of paragraph (2) of subdivision (d).
  - (iii) Accumulated speculatively.
  - (iv) Determined to be inherently wastelike pursuant to regulations adopted by the department.

In addition, the Department is considering the adoption of a federal exemption for "totally enclosed treatment units." The exemption, which is presently found in section 261.4(a)(8), Title 40, Code of Federal Regulations (CFR), would not provide a significant increase of benefit over the exemption which currently exists in HSC section 25143.2(c)(2). We do not expect adoption of the federal exemption until at least late summer.

Therefore, you could use a solvent recovery unit to reclaim spent solvents without

obtaining any additional authorization from the Department so long as HSC section 25143.2(c)(2) conditions are met. The distillation unit does not have to be directly connected to the product cleaning station. The distillation unit could be in another room or another building (so long as that building is considered to be on the same "site" as the product cleaning station).

If you use a solvent distillation unit and recycle more than 100 kilograms a month of solvent under a claim that it qualifies for an exemption under HSC section 25143.2, HSC section 25143.10 requires that you report specified information to the CUPA every two years. The section also gives the CUPA the authority to waive the reporting requirement if they see no need to receive that information. Contact the CUPA for more information and report forms if necessary. A copy of HSC section 25143.10 is provided below.

- **25143.10.** (a) Except as provided in subdivisions (e) and (f), any person who recycles more than 100 kilograms per month of recyclable material under a claim that the material qualifies for exclusion or exemption pursuant to Section 25143.2 shall, on or before July 1, 1992, and every two years thereafter, provide to the local officer or agency authorized to enforce this section pursuant to subdivision (a) of Section 25180, all of the following information, using the format established pursuant to subdivision (d), in writing:
- (1) The name, site address, mailing address, and telephone number of the owner or operator of any facility that recycles the material.
  - (2) The name and address of the generator of the recyclable material.
- (3) Documentation that the requirements of any exemptions or exclusions pursuant to Section 25143.2 are met, including, but not limited to, all of the following:
- (A) Where a person who recycles the material is not the same person who generated the recyclable material, documentation that there is a known market for disposition of the recyclable material and any products manufactured from the recyclable material.
- (B) Where the basis for the exclusion is that the recyclable material is used or reused to make a product or as a safe and effective substitute for a commercial product, a general description of the material and products, identification of the constituents or group of constituents, and their approximate concentrations, that would render the material or product hazardous under the regulations adopted pursuant to Sections 25140 and 25141, if it were a waste, and the means by which the material is beneficially used.
- (b) Except as provided in Section 25404.5, the governing body of a city or county may adopt an ordinance or resolution pursuant to Section 101325 to pay for the actual expenses of the activities carried out by local officers or agencies pursuant to subdivision (a).
- (c) If a person who recycles material under a claim that the material qualifies for exclusion or exemption pursuant to Section 25143.2 is not the same person who generated the recyclable material, the person who recycles the material shall, on or before July 1, 1992, and every two years thereafter, provide a copy of the information required to be submitted pursuant to subdivision (a) to the generator of the recyclable material.
- (d) The person providing the information required by subdivision (a) shall use a format developed by the California Conference of Directors of Environmental Health in consultation with the department. The department shall distribute the format to local officers and agencies authorized to enforce this section pursuant to subdivision (a) of Section 25180.
- (e) A recyclable material generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated nonwaste treatment manufacturing unit is not subject to the requirements of this section, until the recyclable material exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the material remains in the

unit for more than 90 days after the unit ceases to be operated for manufacturing, storage, or transportation of the product or raw material.

(f) A local officer or agency authorized to enforce this section pursuant to subdivision (a) of Section 25180 may exempt from subdivision (a) any person who operates antifreeze recycling units or solvent distillation units, where the recycled material is returned to productive use at the site of generation, or may require less information than that required under subdivision (a) from the person.

(Amended (as amended by Stats. 1995, Ch. 639) by Stats. 1996, Ch. 1023, Sec. 230. Effective September 29, 1996.)

#### 4) What are the requirements concerning container rinsing?

Containers that held hazardous material or hazardous waste must meet applicable requirements of section 66261.7, Title 22, California Code of Regulations (CCR). Containers with a capacity of 5 gallons or less, that are "empty," and which did not contain a material listed as an acute hazardous waste in CFR sections 261.31, 261.32, or 261.33(e) or an extremely hazardous waste pursuant to any of the criteria of CCR sections 66261.110 or 66261.113 can be rinsed without additional authorization [CCR section 66261.7(c) and (d)]. Containers that do not meet those conditions can be rinsed only after the generator has received conditional exemption (CE) authorization [HSC section 25201.5(b)(2)]. A copy of CCR section 66261.7 is provided below.

#### §66261.7. Contaminated containers.

- (a) Except as provided in Section 66262.70 and subsections (g), (h), (i), (k), (l), (m), (n), and (o) of this section, any container (as defined in Section 66260.10 of this division), or inner liner removed from a container, which previously held a hazardous material, including but not limited to hazardous waste, and which is empty as defined in subsection (b) or (d) of this section shall be exempt from regulation under this division and Chapter 6.5 of Division 20 of the Health and Safety Code if it will be managed in accordance with subsection (e) of this section. Existing permits which contain specific conditions governing container cleaning operations which conflict with the provisions of these regulations may be amended to be consistent with this regulation by following the Class 2 permit modification procedures set forth in Section 66270.42(b).
- (b) A container, or an inner liner removed from a container, which previously held a hazardous material, including hazardous waste, is empty if the container or the inner liner removed from a container has been emptied so that:
- (1) If the hazardous material which the container or inner liner held is pourable, no hazardous material can be poured or drained from the container or inner liner when the container or inner liner is held in any orientation (e.g., tilted, inverted, etc.); and
- (2) If the hazardous material which the container or inner liner held is not pourable, no hazardous material remains in or on the container or inner liner that can feasibly be removed by physical methods (excluding rinsing) which comply with applicable air pollution control laws and which are commonly employed to remove materials from that container or inner liner. Following material removal, the top, bottom and sidewalls of such a container shall not contain remaining adhered or crusted material resulting from buildup of successive layers of material or a mass of solidified material. A thin uniform layer or dried material or powder is considered acceptable. A person who treats a container or inner liner onsite by employing physical methods to satisfy the standard in this subsection is authorized to perform such treatment for purposes of Health and Safety Code Section 25201.
- (c) A person who treats a container or an inner liner removed from a container of five gallons or less in capacity which has been emptied pursuant to subsection (b) of this section is authorized, for purposes of Health and Safety Code Section 25201, to perform such activities if any rinsate or other residue generated by these

activities is completely captured and classified in accordance with the provisions of this division and any applicable waste discharge requirements.

- (d) A container or an inner liner removed from a container that has held a material listed as an acute hazardous waste in Sections 261.31, 261.32, or 261.33 (e) Title 40 of the Federal Code of Regulations or a waste which is extremely hazardous pursuant to any of the criteria of Sections 66261.110, 66261.113, and Title 22, California Code of Regulations, Division 4.5, Chapter 11, Appendix X is empty if:
- (1) The container or inner liner has been triple rinsed using a solvent capable of removing the waste and all pourable residues have been removed from the container or inner liner in accordance with subsection (b)(1) of this section. Triple rinsing activities shall require specific authorization from the Department unless subject to the provisions of Health and Safety Code Section 25143.2(c)(2); or
- (2) The container or inner liner is cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal. Alternative methods to rinsing require prior approval by the Department.
- (e) In order to retain the exemption under this section, an empty container or an inner liner removed from a container must be managed by one of the following methods:
- (1) Except as otherwise provided in Section 42170 of the Public Resources Code, for containers of five gallons or less in capacity, or inner liners removed from containers of five gallons or less in capacity, by disposing of the container or inner liner at an appropriate solid waste facility, provided that the container or inner liner is packaged and transported in accordance with applicable U.S. Department of Transportation regulations (49 CFR Part 173); or
- (2) By reclaiming its scrap value onsite or shipping the container or inner liner to a person who reclaims its scrap value, provided that the container or inner liner is packaged and transported in accordance with applicable U.S. Department of Transportation regulations (49 CFR Part 173); or
- (3) By reconditioning or remanufacturing the container or inner liner onsite pursuant to 49 CFR Section 173.28 (c) and (d) (revised at 55 FR 52402 52729) for subsequent reuse, or shipping the container or inner liner to a person who reconditions or remanufactures the container or inner liner pursuant to 49 CFR Section 173.28 (c) and (d) (revised at 55 FR 52402 52729); or
- (4) By shipping the container or inner liner to a supplier or to another intermediate collection location for accumulation prior to managing the container or inner liner pursuant to subsections (e)(1), (e)(2) or (e)(3) of this section, provided that the container or inner liner is packaged and transported in accordance with applicable U.S. Department of Transportation regulations.
- (f) A container or an inner liner removed from a container larger than five gallons in capacity which is managed pursuant to subsection (e) of this section shall be marked with the date it has been emptied and shall be managed within one year of being emptied.
- (g) Any person who generates an empty container or an inner liner larger than five gallons in capacity which previously held a hazardous material shall maintain, and provide upon request, to the Department, the Environmental Protection Agency, or any local agency or official authorized to bring an action as provided in Health and Safety Code Section 25180 the name, street address, mailing address and telephone number of the owner or operator of the facility where the empty container has been shipped. The above information shall be retained onsite for a period of three years.
- (h) Uncontaminated containers, where an inner liner has prevented contact of the hazardous material with the inner surface of the container, are not hazardous waste subject to regulation under this division and Chapter 6.5 of Division 20 of the Health and Safety Code.
- (i) Containers or inner liners which previously held a hazardous material which are sent back to the supplier for the purpose of being refilled are exempt from regulation under this division and Chapter 6.5 of Division 20 of the Health and Safety Code if all of the following requirements are met:
- (1) The container or inner liner was last used to hold a hazardous material acquired from a supplier of hazardous materials:
- (2) The container or inner liner is empty pursuant to the standards set forth in Section 261.7 of Title 40 of the Code of Federal Regulations;
- (3) The container or inner liner is returned to a supplier of hazardous materials for the purpose of being refilled, provided that the supplier's reuse of the container or inner liner is in compliance with the requirements of Section 173.28 of Title 49 of the Code of Federal Regulations;

- (4) The container or inner liner is not treated prior to being returned to the supplier of hazardous materials, except as authorized by this section;
- (5) The container is not treated (except as authorized by this section) by the supplier of hazardous materials without obtaining specific authorization from the Department; and
- (6) The container or inner liner is refilled by the supplier with hazardous material which is compatible with the hazardous material which the container or inner liner previously held unless the container has been adequately decontaminated.
- (j) If the supplier, upon receiving a container or an inner liner pursuant to subsection (i) of this section, is unable to refill the container or inner liner, the supplier shall empty the container or inner liner pursuant to subsections (b) or (d) of this section and manage the container or inner liner pursuant to subsection (e) of this section.
- (k) Emptied household hazardous material and pesticide container, or inner liners removed from containers, of five gallon or less in capacity, are exempt from regulation under this division and Chapter 6.5 of Division 20 of the Health and Safety Code if the container or inner liner is emptied by removing all of the contents that can be removed using practices commonly employed to remove materials from that type of container.
- (I) A compressed gas cylinder is exempt from regulation under this division and Chapter 6.5 of Division 20 of the Health and Safety Code when the pressure in the container approaches atmospheric pressure.
- (m)(1) Provided that they are not a RCRA regulated hazardous waste, as defined in Section 66260.10 of this division, aerosol containers are exempt from regulation under this division and Chapter 6.5 of Division 20 of the Health and Safety Code if the aerosol container was emptied of the contents and propellant to the maximum extent practical under normal use (i.e., the spray mechanism was not defective and thus allowed discharge of the contents and propellant).
- (2) Unless otherwise exempt under other provisions of law, aerosol containers which held a material listed as an acute hazardous waste in Sections 261.31, 261.32, or a material identified as an acute hazardous waste in Section 261.33(e), Title 40 of the Code of Federal Regulations, or a waste which is extremely hazardous pursuant to any of the criteria of Sections 66261.110, 66261.113, and Title 22, California Code of Regulations, Division 4.5, Chapter 11, Appendix X are not exempt under this section and shall be managed as hazardous waste in acccordance with this division and Chapter 6.5 of Division 20 of the Health and Safety Code (commencing with Section 25100).
- (3) For purposes of this section, "aerosol container" means a pressurized, sealed container which contains a product and liquified or compressed gases, and which can dispense that product by the activation of a pressure-sensitive valve
- (n) Containers made of wood, paper, cardboard, fabric, or any other similarly absorptive material are not exempt from regulation under this division or Chapter 6.5 of Division 20 of the Health and Safety Code if the container was in direct contact with and has absorbed the hazardous waste or a hazardous material.
- (o) The following items are not containers for purposes of this section and should continue to be managed as specified below:
  - (1) Used oil filters managed pursuant to Section 66266.130 of this division.
- (2) PCB or PCB contaminated electrical equipment, including but not limited to, transformers and capacitors managed pursuant to 40 CFR Section 761.60, or Section 66268.29(b) of this division, so that the Soluble Threshold Limit Concentration (STLC) and the Total Threshold Limit Concentration (TTLC) values set forth in Section 66261.24(a)(2) of this division are not exceeded.
- (3) Chemotherapy drug intravenous (IV) bags or tubing used for the delivery of chemotherapy agents managed pursuant to Chapter 6.1 of Division 20 of the Health and Safety Code.
- (4) Vehicles and vehicle related containers (e.g., roll-off bins, baker tanks, etc.) of the type certified for transportation of hazardous waste, pursuant to Health and Safety Code Section 25169.1.
- (p) Any container, or inner liner removed from a container, which previously held a hazardous material, including but not limited to hazardous waste, and which is not empty as defined in subsections (b) or (d) of this section, or otherwise exempt from regulation as a hazardous waste under this division or Chapter 6.5 of Division 20 of the Health and Safety Code (commencing with Section 25100), shall be managed as a hazardous waste in accordance with this division and Chapter 6.5 of Division 20 of the Health and Safety Code (commencing with Section 25100).

You mentioned that the facility generates containers that held acetone, IPA, and methanol. Although acetone and methanol are listed in CFR sections 261.31 and 261.33(e), they are not listed because of acute toxicity, they are listed because of their low flash point. Therefore, it is acceptable to rinse (without receiving CE) containers that held acetone, IPA, or methanol so long as they are 5 gallon or less in capacity, empty (so that if held in any orientation no material can be poured out), and the rinsate is managed properly. Spent rinsate from containers that held methanol or acetone is considered a "listed waste" if it exhibits a hazardous characteristic of ignitability (CCR section 66261.21). If it does not exhibit a characteristic, it is not regulated as a hazardous waste [CCR section 66261.3(a)(2)(D)].

The program used 6 hours (including driving time) to provide the facility visit and 4 hours to respond to questions and issues. Therefore, our accounting office will send you an invoice within the next couple of months for 10 hours (at approximately \$77.00/hour).

Enclosed is a copy of the program's certification and survey forms. Please contact me if you have any questions or require additional assistance.

Sincerely,

Leif Peterson

Consultative Services
Office of External Affairs

luf Ketuson

**Enclosures** 



Gray Davis

Governor

## Department of Toxic Substances Control

9

Jesse R. Huff, Director 10151 Croydon Way, Suite 3 Sacramento, California 95827-2106

January 19, 1999

Winston H. Hickox Secretary for Environmental Protection

Mr. Al Toy Crystal Technology, Incorporated 1040 East Meadow Circle Palo Alto, California 94303-4230

#### CERTIFICATION STATEMENT

Consultative Services' main goal is to help California businesses comply with hazardous waste management requirements. In order to help ensure the correction of possible hazardous waste management compliance issues discovered during an onsite walk-through and to ensure that the program's services are effectively used, it is important that this certification form be returned for our files.

By signing this form, you are informing Consultative Services that you have reviewed the information provided to you during the walk-through, in the follow-up document, and have implemented compliance related changes as necessary. Maintaining compliance with applicable hazardous waste management requirements helps to protect public health, the environment, and your employees.

Signature of Company Representative

Date

1-26-99

Please return this form to:

Consultative Services
Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, CA 95827-2106

Attention: Leif Peterson

California Environmental Protection Agency

Printed on Recycled Paper



## Department of Toxic Substances Control

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Jesse R. Huff, Director 10151 Croydon Way, Suite 3 Sacramento, California 95827-2106

Gray Davis Governor

#### Winston H. Hickox Secretary for Environmental Protection

# CONSULTATIVE SERVICES SURVEY FORM

Thank you for using Consultative Services. We hope that the program has met your needs. Please take a minute to give us your comments.
1) Any ideas on how we could improve the program?
2) List any benefits from using this program.
3) Any other comments?
Again, thanks for using the program. Please return survey to the letterhead address attention:

Leif Peterson, Consultative Services.



January 14, 2000

U.S. Environmental Protection Agency, Region IX Attn: Cameron McDonald 75 Hawthorne Street San Francisco, CA 94105

Dear Ms. McDonald

Enclosed, please find copies of the documents you requested during your site visit of 1/14/00.

Please feel free to contact me @ (650) 354-0165 if you have questions or if I may be of assistance. Thank you.

M long

Al Toy

Environment, Health & Safety Manager

Recieved JAN 17,2000

1040 East Meadow Circle Palo Alto, California 94303-4230

Direct Line #

Direct Fax #

Corporate Offices:

(650) 856-7911

Corporate Fax:

(650) 424-8806

Sales Fax:

(650) 354-0173

www.crystaltechnology.com

## Crystal Technology

## Manifest Tracking Log

) Manifest #	Date Submitted	Action Date	Date Received	Comments
99553776	10/7/99	11/7/199	10/15/97	
99553928		11/14/99	10/25/99	
99550482	10/21/99	11/21/99	141/99	
9950768	10/29/99	11/29/99	11/5/99	
99553327	11/4/99	12/4/99	11/8/99	
99553415	11/11/79	12/11/99	11/23/99	
99824034	11/18/99	12/18/99	12/1/99	
99824319		1/2/97	12/7/99	
99755646		1/9/99	12/16/99	
99755866	12/16/99	1/16/99	12/21/99	1. 6.0
98557168	1417/89	1/17/99	12/23/97	Lab fack
99823667	RESPET	1/28/99	1/3/99	
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16. GENERATOR'S CERTIFICATION: 1 hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and ore in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and taxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, starage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford

Printed Typed Name Signature Year 21/ JA 5 4 2 17. Transporter 1 Acknowledgement of Receipt af Materials Printed/Typed Nome Manth Day Year Signature 2 dila 1877 18. Transporter 2 Acknowledgement of Receipt of Materials Day Year Printed/Typed Nome Signature Month 19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materia	ols cavered by this manifest except as noted in Item 19.
Printed/Typed Name	Signoture
CHERRY BARRELL	The state of the s

Reference transfer & HMD1973

DO NOT WRITE BELOW THIS LINE.

Month

Day

到10

Year

EMERGENCY OR SPILL,

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<b>A</b>		NIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator's US EPA ID No.  CAD 980 882 369	Manifest Doc	_	22. Pa	1	nation in to is not req			
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FACILITY	35.	Discrepancy Indication Space							•		

SUBCH 1-800-424-8802: WITHIN CALIFORNIA, CALL 1-800-852-7550

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESP

#### See Instructions on back of page 6.

Department of Toxic Substances Control

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UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator			Moni	fest Documen	rNa.   /   S	2. Page 1		on in the shode uired by Federo	
3. Generator's Name and Mailing Address CRYSTAL TECHNOLOGY TWC 1940 E NEADOW CIRCLE PALO ALTO, CA 34303 4. Generator's Phone ( 550 354-0158 Con		Ži, Ang.	******				Manifest Document N	Number 3	mber 9 9 8 2 4 3 1 9	
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#### See Instructions on back of page 6.

Department of Toxic Substances Control

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DO NOT WRITE BELOW THIS LINE.

Reference lumber: 1 000025525

3935 JYZB 3E CENTER 1-800-424-8802: WITHIN CALIFORNIA, CALL 1-800-852-755

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RES'

À	110150011 1147400011C	1. Generator's US EPA ID	No.	Manifest Docur	nent No.	2. Page 1	Information	n in the shaded areas
T	UNIFORM HAZARDOUS WASTE MANIFEST	0 4 9 3 3 9 3	3 2 3 5	1866	51810			ired by Federal law.
	3. Generatar's Name and Mailing Address CRYSTAL TECHNOLOGY INC 1040 E MEADON CIRCLE PALO ALTO, CA 94203					Manifest Document N		8886880
l	4. Generator's Phone ( 650 354-0158 Co						ارجل ا	
	5. Transparter 1 Campany Name	6. US	EPA ID Number			Transparter's ID	S.	76
l	RONIC ENVIRONMENTAL TECH.	<u> </u>	0 0 1 3 1	3 4 3 3		parter's Phone	(650)324	~1538
	7. Transparter 2 Company Name	8. US	EPA ID Number			Transporter's ID		
l	9. Designated Facility Name and Site Address	10. US	EPA ID Number			oorter's Phone Facility's ID		
l	ROMIS ENVIRONMENTAL TECH				E	A 0 0 0	3 4 5	2 5 5 7
	2081 BAY ROAD EAST PALO ALTO, CA 94303	; 3 	0 0 0 3 4	3 1 3 5		,	(650)324	-1638
	11. US DOT Description (including Proper Shipp	•	ID Number)	12. Na.	Containers Type	13. Total Quantity	14. Unit Wt/Val	1. Waste Number
	· VASTE FLAMMABLE LIBUTES, A	J.S. J VM1893 II						State 212
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Ì	d. MASTE POTASSIUM HEDRUMIDE, S		018752 E96#	134 0 0	,			State
					, =	~.~.~.		EPA/Other
		Pril# E	306315 ERSH	154 00		00055		D002
ı	J. Additional Descriptions for Materials Listed A	bove			K. Handl	ina Codes for Waste	s Listed Abov	
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36600 CENTER 1-800-424-8802: WITHIN CALIFORNIA, CALL 1-800-852-7550

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IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESF

	U		ORM HAZARDOUS	21. Generator's US EPA ID No.	Manifest Doo	ument No.	22. P	age Informat	ion in t	he shaded	
П			ASTE MANIFEST ntinuation Sheet)	CAD980882369	866e	00	١,,		not req	uired by Fe	deral
П			erator's Name	C R D 3 0 0 0 0 2 3 0 3	1000	30	2 0			VI	
	20.		STAL TECHNOLOGY INC	te Manifest Doci		480					
		1040	DE NEADOW CIRCLE				M. Sta	ate Generator's I		4 00	
$\  \cdot \ $		PALC	ALTO, CA 94303	58 Contact: AL TOY							
	24.	Trans	sporter Company Nam	e 25.	US EPA ID Num	ber	N. Sta	ite Transporter's	ID	· · · · · · · · · · · · · · · · · · ·	A.B
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		US D		Proper Shipping Name, Hazard Class, a	and ID Number)	No.	Туре	30. Total Quantity	31. Unit Wt/Vol	R. Waste	No.
	a.		NON-RCRA HAZARDOUS WAS (OIL, FREON)	STE, LIQUID						CA:	223
				Prfl# E 30631	6 FRG#	001	DF	00055	6,	EPA:	NONE
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	S. A	Additio	onal Descriptions for Materi	als Listed Above		O THANK	T. Har	ndling Codes for	Wastes	Listed Abo	ve
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	32.	Spec	ial Handling Instructions an	d Additional Information		24 UD 1	ENEDGE	NCY RESPONSE #	. (550	1254-0165	
						24 an. 1	LIILKUL	ACT RESPONSE *	. 1000	1004-0100	
▼ T	33.	Tran	sporter Acknowledge	ement of Receipt of Materials						Dat	te
R			ed/Typed Name		nature			41-2-		Month Day	
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OR				ement of Receipt of Materials						Dat	
TRAZOPORTER FAC-L-P		Printe	ed/Typed Name	Sig	nature					Month Day	Year
F	35.	Disc	repancy Indication Space							L	
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E División de la contraction d	
	CALIFORNIA-ONLY (NON-RCRA) HAZARDOUS WASTE
WASTEWATERNON WASTEWATER MANIFEST #: 9855 7/68	LAND DISPOSAL RESTRICTION NOTIFICATION FORM

PA #:	2002	, DOOB, DOOT, DOOS, DOOI
*******		TABLE OF EPA WASTE NUMBERS WITH SUBCATEGORIES
HECK I	EPA#	ŠUBCATEGORY
	0001	High-TOC (≥ 10%) Uquid
o <del>Mic  </del>	0001	Choose One:
CIMIC	0001	[ ] Low-TOC (< 10%) ignitable Liquid
		[ ] Ignitable NON-Liquid
fi		DOT Oxidizer
ł		DOT Flammable Gas
- 1		
		Managed in System discharged to Sewer or discharged to Deep Well Injection System (with NO-Migration Variance)
- 1	0001	Choose One:
- 1		[   Low-TOC (< 10%) ignitable Liquid [     Ignitable NON-Liquid
ĺ		[ ] DOT Oxidizer
ŀ		1 DOT Hammable Gas
ŀ		. , , , , , , , , , , , , , , , , , , ,
ł	• :	NOT Managed in System discherged to Sewer or discharged to Deep Well Injection System (with NO-Migration
		Verlance)
	0002	Managed in System discharged to Sewer or discharged to Deep Well Injection System (with NO-Migration Variance)
V	D002	NOT Managed in System discharged to Sewer or discharged to Deep Well Injection System (with NO-Migration
		Verlance)
	D003	Reactive Cyarides
	0003	Reactive Sulfides
	D003	Water Reactives NON-Wastewaters
	D006	Cadmium-Containing Batteries
	8000	Lead-Acid Batteries
	D009	Low-Mercury ( < 250 ppm) NON-Wastewaters
	D009	High-Mercury (≥ 260 ppm) NON-Wastewaters with Organics <u>BUT NOT</u> Incinerator Residues  High-Mercury (≥ 260 ppm) NON-Wastewaters <u>WITHOUT</u> Organics including Incinerator and RMERC Residues
	0009	All Mercury Wastewaters
	F025	Condensed Light Ends from the Production of Certain Chlorinated Aliphatic Hydrocarbons
	F025	Spent Filters/Alds and Spent Desicoants from the Production of Certain Chlorinated Aliphatic Hydrocarbons
	K006	Anhydrous Treatment Sludge from the Production of Chrome Oxide Green Pigments
	K006	Hydrated Treatment Sludge from the Production of Chrome Oxide Green Pigments
	K069	Calcium Sulfete (Low Lead) Emission Control Dusts/Sludge from Secondary Lead Smelting
	K069	NON-Calcium Sulfate (High Lead) NON-Westewater Emission Control Dusts/Sludge from Secondary Lead Smelting
-	K071	RMERC NON-Wastewater Residues
	K071	RMERC NON-Wastewater that IS NOT Residues
	K071	All Westeweters
	K106	Low-Mercury (< 260 ppm) NON-Wastewater RMERC Residues
	K106	Low-Mercury (< 260 ppm) NON-Wastewater that IS NOT RMERC Residues
	K106	High-Mercury (≥ 260 ppm) NON-Westewater
	K106	All Wastewaters
	P047	4,6-Dinitro-o-Cresol
	P047	4,6-Dinitro-o-Cresol Salts
	P065	Low-Mercury (< 260 ppm) NON-Wastewater from RMERC Residues
	P065	Low-Mercury (< 260 ppm) NON-Wastewater from Incinerator Residues
	P065	High-Mercury (> 280 ppm) NON-Wastewater from Incinerator or RMERC Residues
	P065	All NON-Wastewaters that ARE NOT Incinerator or RMERC Residues
	P065 P092	All Wastewaters  Low-Mercury (< 260 ppm) NON-Wastewater from RMERC Residues
	P092	Low-Mercury (< 260 ppm) NON-Wastewater from Incinerator Residues
	P092	Low-Mercury (< 250 ppm) NON-Wastewater from Incinerator Residues  High-Mercury (≥ 260 ppm) NON-Wastewater from Incinerator or RMERC Residues
	P092	All NON-Wastewaters that ARE NOT incinerator or RMERC Residues
	P092	All Wastewaters
	U151	Low-Mercury (< 260 ppm) NON-Wastewater RMERC Residues
	U151	Low-Mercury (< 260 ppm) NON-Wastewater that IS NOT RMERC Residues
	U151-	High-Mercury (≥ 260 ppm) NON-Wastewater
	U151	All Wastewaters

ROFILE #:	322831 CA	WASTE #: 551 MANIFEST #: 9855	1160
			TREATMENT
CHECK	NON-RCRA	TREATMENT STANDARDS	STANDARD
ALL THAT	WASTE	· ·	
APPLY	CATEGORY		REFERENCE
	Btu's	Must be incinerated or processed by other approved methods.	22 CCR 66268.12
1	(> 3,000 Btu/pound)		
	Volatile Organic	Must be incinerated or processed by other approved methods.	22 CCR 66268.12
	Compounds		
	(Contains > 1%)		
	Liquid NON-Wastewater	Acetone, Benzene, n-Butanol, Carbon Tetrachloride,	22 CCR 68268.10
	Solvent Waste	Chlorobenzene, Chloroform, Chloromethane, Cresols,	Table III
	(Liquid with ≥ 1% TOC)	Cyclohexanone, o-Dichlorobenzene, 1,2-Dichloroethane,	
	,	1,1-Dichloroethylene, Diethyl Phthalate, Ethyl Acetate,	
	1	Ethyl Benzene, Ethyl Ether, Hexachlorobutadiene,	
		Hexachloroethane, Isobutanol, Isophorone, Methanol,	
		Methyl Ethyl Ketone, Methyl Isobutyl Ketone, Naphthalene,	
		Methylene Chloride, Phenol, Pyridine,	
		1,1,2,2-Tetrachloroethane, Tetrachloroethylene, Toluene,	
		1,2,4-Trichiorobenzene, 1,1,1-Trichioroethane,	
		Trichloroethylene, Trichloromonofluoromethane,	
		1,1,2-Trichloro-1,2,2-Trifluoroethane, and Xylene.	
	Organic-Containing	Chlorinated Herbicides, Organochlorine Pesticides,	22 CCR 68268.11
	Aqueous or Liquid Waste	Organophosphorus Pesticides, PCB's as Arochlors,	
	(Contains ≤ 1% Solids)	Semi-Volatile Organics, and Volatile Organics.	
	Organic-Containing Solid	Oil and Grease, Semi-Volatile Organics, and Volatile Organics.	22 CCR 66268.11
_	Waste		
/	(Contains > 1% Solids)		
	Metal-Containing	Antimony, Arsenic, Barium, Beryllium, Cadmium,	22 CCR 66268.10
	Aqueous Waste	Chromium(VI), Chromium(III), Cobalt, Copper, Lead, Mercury,	Table II, CCW
	(Water with ≤ 1%	Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium,	
	Solids)	and Zinc.	
	Metal-Containing Solid	Antimony, Arsenic, Barium, Beryllium, Cadmium,	22 CCR 66268.10
	Waste	Chromium(VI), Chromium(III), Cobalt, Copper, Lead, Mercury,	Table I-C, CCWE
	(Contains > 1% Solids)	Molybdanum, Nickel, Selenium, Silver, Thallium, Vanadium,	
	ß.	and Zinc.	
	PCB-Containing Waste	Liquid PCB's ≥ 5 ppm, Drained PCB or PCB-Contaminated	22 CCR 66268.1
	•	Transformer Carcasses, PCB-Containing Electrical Equipment	
	1	that is not regulated under TSCA (e.g., Small Capacitors, Light	
	1	Ballasts, and Fixtures.) Refer to regulations for treatment	
		standards.	
	Asbestos-Containing	Friable Asbestos must be wetted or processed into a non-	22 CCR 66268.1
	Waste	friable form without visible emissions; then placed into leak	1
	1	tight containers or wrapping.	
	Auto Shredder Waste	Cadmium, Chromium(VI), Chromium(Total), Copper, Lead,	22 CCR 66268.10
	į	Mercury, Nickel, and Zinc.	Table I-A, CCWE
	Foundry Sand Waste.	Cadmium, Copper, Lead, Nickel, and Zinc.	22 CCR 88268.10
			Table I-B, CCWE
	Metal-Containing	Arsenic, Cadmium, Copper, Lead, Nickel, Selenium, Vanadium,	22 CCR 66268.10
	Foundry Baghouse	Zinc.	Table I-E, CCWE
	Waste		
	Metal-Containing Fly	Arsenic, Cadmium, Copper, Lead, Nickel, Selenium, Vanadium,	22 CCR 66268.10
	Ash, Bottom Ash, Retort		Table I-D, CCWE
	Ash, or Baghouse Ash		
	NOT from Foundries	ł	1

PROFILE #: 322 831

## CALIFORNIA-ONLY (NON-RCRA) HAZARDOUS WASTE LAND DISPOSAL RESTRICTION NOTIFICATION FORM

ROFILE	1: 322631	WASTEWATERINON WASTEWATER MANIFEST #: 9855	1168
IPA #:	DO02, DOOB,	2007, 2005, 2001	

TA .		*INIP XP PET ULAST UITABERA UITATI AUGAT PAXADEA
		TABLE OF EPA WASTE NUMBERS WITH SUBCATEGORIES
CHECK	EPA#	SUBCATEGORY
X	D001	High-TOC (≥ 10%) Uquid
TOMIC	0001	Choose One:
	1	[ ] Low-TOC (< 10%) Ignitable Liquid
	li .	[ ] Ignitable NON-Liquid
		[ ] DOT Oxidizer
	Ð	[ ] DOT Flammable Gas
	1	I
	D001	Managed in System discharged to Sewer or discharged to Deep Well injection System (with NO-Migration Variance)
	D001	Choose One;     Low-TOC (< 10%) Ignitable Liquid
	11	[ ] Ignitable NON-Liquid
	ll .	[ ] DOT Oxidizer
	Ħ	[ ] DOT Flammable Gas
	1	
		NOT Managed in System discharged to Sewer or discharged to Deep Well Injection System (with NO-Migration
	1	Variance)
	D002	Managed in System discharged to Sewer or discharged to Deep Well Injection System (with NO-Migration Variance)
X	0002	NOT Managed in System discharged to Sewer or discharged to Deep Well Injection System (with NO-Migration
1		Variance)
	D003	Reactive Cyanides
	D003	Rescrive Sulfides
	D003	Water Reactives NON-Wastewaters
	D006	Cadmium-Containing Batteries
	D008	Lead-Acid Batteries
	D009	Low-Mercury (< 260 ppm) NON-Wastewaters
	D009	High-Mercury (≥ 260 ppm) NON-Wastewaters with Organics <u>BUT NOT</u> Incinerator Residues
	0009	High-Mercury (≥ 260 ppm) NON-Wastewaters WITHOUT Organics including incinerator and RMERC Residues
	D009	All Mercury Wastewaters
	F025	Condensed Light Ends from the Production of Certain Chlorinated Aliphatic Hydrocarbons
	F025	Spent Filters/Alds and Spent Dealcounts from the Production of Certain Chlorinated Allphatic Hydrocarbons
	K006	Anhydrous Treatment Sludge from the Production of Chrome Oxide Green Pigments
	K006	Hydrated Treatment Sludge from the Production of Chrome Oxide Green Pigments
	K069	Calcium Sulfate (Low Lead) Emission Control Dusts/Sludge from Secondary Lead Smelting
	k069	NON-Calcium Sulfate (High Lead) NON-Wastewater Emission Control Dusts/Sludge from Secondary Lead Smelting
	K071	RMERC NON-Wastewater Residues
	K071	All Westewaters
	K071 K106	
	K106	Low-Mercury (< 260 ppm) NON-Wastewater RMERC Residues
	K106	Low-Mercury (< 260 ppm) NON-Wastewater that IS NOT RMERC Residues
	K106	High-Mercury (≥ 260 ppm) NON-Wastewater  All Wastewaters
	P047	4.6-Dinitro-o-Cresol
	P047	4,6-Diritro-o-Creaol Salta
	P065	Low Mercury (< 260 ppm) NON Wastewater from RMERC Residues
	P065	Low-Mercury (< 260 ppm) NON-Wastewater from Incinerator Residues
	P065	High-Mercury (≥ 260 ppm) NON-Wastewater from Incinerator or RMERC Residues
	P065	All NON-Wastewaters that ARE NOT Incinerator or RMERC Residues
	P065	All Wastewaters
	P092	Low-Mercury (< 260 ppm) NON-Wastewater from RMERC Residues
	P092	Low-Mercury (< 260 ppm) NON-Wastewater from Incinerator Residues
	P092	High-Mercury (≥ 260 ppm) NON-Wastewater from Incinerator or RMERC Residues
	P092	All NON-Wastewaters that ARE NOT Incinerator or RMERC Residues
	P092	All Wastewaters
	U151	Low-Mercury (< 260 ppm) NON-Wastewater RMERC Residues
	U151	Low-Mercury (< 260 ppm) NON-Westewater that IS NOT RMERC Residues
	U151	High-Mercury (≥ 260 ppm) NON-Wastewater
-	U151	All Wastewaters
لحيحس	<u> </u>	

				- 125	- 11 12
PROFILE #:	322831 CA	WASTE #: 59	5/	MANIFEST #: 9855	1160
CHECK	NON-ACRA	1	REATMENT STAN	DARDS	TREATMENT
ALL THAT	WASTE				STANDARD REFERENCE
APPLY	CATEGORY				
	Btu's	Must be incinerate	d or processed by	other approved methods.	22 CCR 66268.17
	(> 3,000 Btu/pound)			.,	** *** ****
	Volatila Organic	Must be incinerate	d or processed by	other approved methods.	22 CCR 66268.12
	Compounds			,	
	(Contains > 1%)	A B	a Butanal Carban	Total	22 CCR 68268.10
	Liquid NON-Wastawater		, n-Butanol, Carbon Noroform, Chlorome		Table III
	Solvent Waste (Liquid with ≥ 1% TOC)		Dichlorobenzene, 1		1 4010 111
	(Liquid with 2 1 % 10C)		ne, Diethyl Phthalat		
			yl Ether, Hexachlor		
			Isobutanol, Isopho		
	i e	1		Ketone, Naphthalene,	
		Methylene Chloride	e, Phenol, Pyridine,		
		1,1,2,2-Tetrachlor	oethane, Tetrachlor	oethylene, Toluene,	
		1,2,4-Trichloroben	zene, 1,1,1-Trichio	roethane,	
			Trichloromonofluo		
			2,2-Trifluoroethana,		
	Organic-Containing		ides, Organochlorin		22 CCR 66268.11
	Aqueous or Liquid Waste		Pesticides, PCB's		
	(Contains ≤ 1% Solids)		inics, and Volatile (		22 CCR 66268.11
	Organic-Containing Solid	Oil and Grease, Se	mi-Volatila Organic	s, and Volatile Organics.	22 CCN 00208.11
	Waste (Contains > 1% Solids)				
	Metal-Containing	Antimony Areanic	, Barium, Beryllium	Cadmium	22 CCR 66268.10
	Aqueous Waste			Copper, Lead, Mercury,	Table II, CCW
	(Water with ≤ 1%			, Thailium, Vanadium,	
	Solids)	and Zinc.	,		
	Metal-Containing Solid	Antimony, Arsenic	, Barium, Beryllium	, Cadmium,	22 CCR 66268.10
	Waste	Chromium(VI), Ch	romium(III), Cobalt,	Copper, Laad, Mercury,	Table I-C, CCWE
	(Contains > 1% Solids)		kel, Selenium, Silve	r, Thallium, Vanadium,	
		and Zinc.			
	PCB-Containing Waste			or PCB-Contaminated	22 CCR 66268.11
	1			ng Electrical Equipment	
				, Small Capacitors, Light	
			ires.) Hefer to regu	lations for treatment	
		standards.		processed into a non-	22 CCR 66268.11
	Asbestos-Containing Waste			; then placed into leak	22 CCH 60208.11
·	***************************************	tight containers or		, their placed lifto leak	
	Auto Shredder Waste			Total), Copper, Lead,	22 CCR 66268.10
	7.0.0 011100001 1111110	Mercury, Nickel, a			Table I-A, CCWE
	Foundry Sand Waste.		, Lead, Nickel, and	Zinc.	22 CCR 66268.10
					Table I-B, CCWE
	Metal-Containing	Arsenic, Cadmium	, Copper, Lead, Nic	kel, Selenium, Vanadium,	22 CCR 68268.10
	Foundry Baghouse	Zinc.			Table I-E, CCWE
	Waste				
	Metal-Containing Fly	Arsenic, Cadmium	, Copper, Lead, Nic	ckel, Selenium, Vanadium,	22 CCR 66268.10
	Ash, Bottom Ash, Retort	Zinc.			Table I-D, CCWE
	Ash, or Baghouse Ash	1			
	NOT from Foundries				

## ROMIC ENVIRONMENTAL TECHNOLOGIES CORPORATION FEDERAL LAND DISPOSAL RESTRICTION NOTIFICATION FORM

#### TABLE OF HAZARDOUS CONSTITUENTS

HECK	CONSTITUENT	US CON	CONSTITUENTS
		CHECK	
II	Aconophthono (1,8-Dihydroacenaphthalene or Ethylenenaphthalene)		Chrysono (1,2-Benzphenanthrene)
	Acenaphthylene		o-Crosol (o-Cresylic Acid or 2-Methylphenol)
	Acetone (Dimethylketone or 2-Propanone)		m-Crosol (m-Cresylic Acid or 3-Methylphenol)
	Acetonitrile (Methyl Cyanide)		p-Crosol (p-Cresylic Acid or 4-Methylphenol)
	Acotophonono (Acetylbenzene or Hypnone or Phenylmethylketone)		Cyeride (Amenable)
	2-Acetylaminofluorene		Cyanide (Total)
1	Acrolon (Acraldehyde or Acrylaldehyde or Allyl Aldehyde or 2-Proenal)		Cyclohexanone (Ketohexamethylene or Pimelic Ketone)
	Acrylamide (NOT F039)		o.p'-DDD (Dichlorodiphenyldichloroethane)
	Acrylonitrile (Propenenitrile or Vinyl Cyanide)		p,p'-DDD (Dichlorodiphenyldichloroethane)
	Aldrin	ļ	o,p'-DDE (Dichlorodiphenyldichloroethylene)
	4-Aminobiphonyl (4-Biphenylamine or 4-Phenylaniline)		p.p'-DDE (Dichlorodiphenyldichloroethylene)
	Aniline (Aminobenzene or Aniline or Phenylamine)		o,p'-DDT (Dichlorodiphenyltrichloroethane)
	Anthracene		p.p'-DDT (Dichlorodiphenyltrichloroethane)
	Antimony		Dibenz(s,h)-Anthrecene
	Aramite (2(p-tert-Butylphenaxy)-isopropyl-2-chloroethyl sulfite)		Dibenz(a,e)-Pyrene
	Arsenic		1,2-Dibromo-3-Chloropropane
/ " 15	Barium		1,2-Dibromomethane (Ethylene Dibromide)
	Benz(a)-Anthrecene		Dibromomethane (Methylene Bromide)
	Benzal Chloride (Benzyl Dichloride) (NOT F039)		DI-n-Butyl Phthalate (Dibiayl Phthalate)
- 41	Benzene		m-Dichlorobenzene (1,3-Dichlorobenzene)
	Benzo(b)-Fluoranthene		o-Dichlorobenzene (1,2-Dichlorobenzene)
	Benzo(k)-Fluoranthene		p-Dichlorobenzene (I,4-Dichlorobenzene)
	Benzo(g,h,l)-Perylene		Dichlorodifluoromethane (CFC-12 or Difluorodichloromethane or Fluorocarbon 12 or Freon 12)
	Benzo(a)-Pyrene		1,1-Dichloroethane (Ethylidene Chloride)
	alpha BHC (Hexachlorocyclohexane)		1,2-Dichloroethane (Ethylene Dichloride)
	beta-BHC (Hexachlorocyclohexane)		1,1-Dichloroethylene
	delta-BHC (Hexachlorocyclohexane)	-	trans-1,2-Olchloroethylene
	gamma-BHC (Hexachlorocyclohexane)	1	2,4-Dichlorophenol
	Beryllium	1	2,6-Dichlorophenol
	Bls(2-Chloroethoxy) Methane	1	2,4-Dichlorophenoxyscetic Acid (2,4-D)
	Bis(2-Chloroethyl) Ether	1	1,2-Dichloropropane (Propylene Dichloride)
	Bis(2-Chloroisopropyl) Ether		cls-1,3-Dichloropropylene (cis-1,3-Dichloropropene)
	Bie(2-Ethylhexyl) Phthelate		trans-1,3-Dichloropropylene (trass-1,3-Dichloropropene)
	Bromodichloromethane		Dieldrin
	Bromomethane (Methyl Bromide)	1	Diethyl Phthalate (Ethyl Phthalase)
	4-Bromophenyl Phenyl Ether		p-Dimethylaminoazobenzene (Xylidene) (NOT F039)
	n-Butyl Alcohol (I-Butanol or Butyric Alcohol)		2,4-Dimethylphenol (Xylenol)
	Butyl Benzyl Phthelate		Dimethyl Phthalate
	2-sec-Butyl-4,6-Dinitrophenol (Dinoseb)	-	1,4-Dinitrobenzene
-	Cadmium		4,6-Dinitro-o-Cresol (4,6-Dinitro-2-Methylphenol)
	Carbon Disulfide (Carbon Bisulfide)		2,4-Dinitrophenol
-	Carbon Tetrachloride (Tetrachloromethane or Perchloromethane)		2,4-Dinitrotoluene
{	Chlordane (alpha and gamma isomers)		2,6-Dinitrotoluene
	p-Chloropriline (p-Aminochlorobenzene)		Di-n-octyl phthalate (Di(2-Ethylhexyl) Phthalate)
	Chlorobenzene (Monochlorobenzene or Phenyl Chloride)		1,4-Dioxane
- 11	Chlorobenzilate		Diphenylamine
	2-Chloro-1,3-Butadione (Chloroprene)	1	1,2-Diphenyl Hydrazine
	p-Chlora-m-Cresol (4-Chlora-J-Methylphenol)		Diphenyinitrosemine (N-nitrosodiphenylamine)
11	Chlorodibromomethane	-	DI-n-propylnitrosoamine
	Chloroethane (Ethyl Chloride)		Disulfation (DI-Syston)
	2-Chloroethyl Vinyl Ether (2-Chloroethoxyethane) (NOT F039)		Endosulfan I
	Chloroform (Trichloromethane)		Endosulfan II
	Chloromethane (Methyl Chloride)	<b> </b>	Endosulfan Sulfate
- 11	2-Chloronaphthalene	D	Endrin
	2-Chlorophenol (2-Chloro-1-Hydroxybenzene)	₽	Endrin Aldehyde
	3-Chloropropylene (Allyl Chloride)	<b>!</b>	2-Ethoxyethanol (Ethylene Glycol Monoethyl Ether)
	3-CITOTOPYIONE (MAJI CHIONAL)		
	Chromium (Total)		MOT UNIVERSAL TREATMENT STANDARD  Ethyl Acousto (Aceric Ester or Aceric Ester or Vinegar Naphsha

HECK	CONSTITUENT	CHECK	CONSTITUENTS
-	Ethyl Bonzono (Phenylethane)		N-Nitrosopiperidine
	Ethylene Oxide (Epoxyethane or Oxirane)		N-Nitrosopyrrolidine
H	Entries Oxide (Epotyenime or Oxidate)		
	Ethyl Ether Diethyl Ether or Diethyl Oxide or Ether or Ethyl Oxide		5-Nitro-o-Toluidine
- 1	or Sulfuric Ether)		· ·
	Ethyl Methacrylate		Parathion
	Famphur		PCB's (Total) (All PCB Isomers and Aroclors) (Polychlornased
1	1 3.1.4	1	Biphenyls)
	Huoranthene (Idryl)	<b> </b>	Pentachlorobenzene
	Fluorene (gamma-Diphenylenemethane)	ļ	Pentachlorodibenzo-p-dioxina (PeCDD's)
—-[	Fluoride	·	Pentachlorodibenzofurana (PeCDF's)
	Heptachlor	·	Pentachloroethane (Penualin) (NOT F039)
	Heptachlor Epoxide		Pentechloronitrobenzene
{	Hexachlorobenzene (Perchlorobenzene)	<b></b>	Pentechlorophenol
—	Hexachiorobutadiene	·	Phenacetin (Acetopheneridin)
	Hexachlorocyclopentadiene (Perchlorocyclopentadiene)		Phenanthrene
	Hexachlorodibenzo-p-Dioxins (HxCDD's)	l	Phenol
	Hexachlorodibenzofurana (HxCDF's)	1	Phorate
	Hexachloroethane (Carbon Hexachloride or Carbon Trichloride or	1	Phthalic Acid (o-Benzene Dicarboxylic Acid or o-Phihalic Acu
-	Perchoroethane)		(NOT F039)
	Hexachloropropylene (Hexachloropropene or Perchloropropylene)		Phthalic Anhydride
	Indeno(1,2,3-c,d)-Pyrene	1	Pronamide
	lodomethane (Methyl Idodide)	1	Propanenitrile (Ethyl Cyanide)
	Isobutanol (Isobutyl Alcohol or Isopropylcarbinol or	1	Рутеле
	2-methyl-1-propanol)		1
——	Isodrin	<b>}</b>	Pyridine
	isosafrole	1	Satrola (4-Allyl-1, 2-Methylenediaxybenzene)
		1	Selenium
	Kepone (Chlordecone)		Skver
メ	Lead	<b>!</b>	
	Mercury	<b>!</b>	Silvex (2,4,5-IP) (2,4,5-Trichlorophenaxy-Propionic Acid)
	Morcury (Retors Residues) (NOT F039)	<b>I</b>	SUING (NOT UNIVERSAL TREATMENT STANDARD BUT FO
	Methacrylonitrile (2-Methyl-2-Propenenitrile)		1,2,4,5-Tetrachlorobenzene
	Methanol (Methyl Alcohol)	X	Tetrachlorodibenzo-p-Dioxina (TCDD')
	Methapyrilene		Tetrachlorodibenzofurana (TCDF's)
	Methoxychlor (Methyoxy DDT)	-	1,1,1,2-Tetrachloroethane (Acetylene Tetrachloride)
	3-Methylcholanthrene		1,1,2,2-Tetrachloroethane (Acrylene Tetrachloride)
	4,4-Methylene-bis-(2-Chloroaniline)	1	Tetrachloroethylene (Perchloroethylene)
	Methylene Chloride (Dichloromethane or Methylene Dichloride)	1	2,3,4,6-Tetrachiorophenol
	Methyl Ethyl Ketone (2-Butanone or Ethyl Methyl Ketone or MEK)	1	Thallum
	Methyl Isobutyl Ketone (Hexone or Isopropylacetone or 4-Methyl	·	Toluene (Methylbenzene or Phenylmethane)
	-2-Pentanone)	1	, , , , , , , , , , , , , , , , , , , ,
	Methyl Methacrylate	╢	Toxaphene (Cilorinated Camphene)
	Methyl Methansulfonate		Tribromomethane (Bromoform)
		<b></b>	1,2,4-Trichlorobenzene
	Methyl Parathion (O,O-Dimethyl-O-p-Nurophenylphosphorothioate)	·}	
	Naphthalene (Tar Camphor)	-	1,1,1-Trichloroethane (Methyl Onloroform or TCA)
	2-Naphthylamine (beta-Naphthylamine)	l l	1,1,2-Trichloroethane (beta-Trichloroethane or Vinyl
		1	Trichloride)
	Nickel	1	Trichlorethylene (TCE)
	o-Nitroaniline (NOT F039)	1	Trichloromonofluoromethane (CFC-11 or Fluorocarbon 11
			Freen 11 or
			Trichiorofiuoromethane)
	p-Nitroaniline		2,4,5-Trichlorophenol
	Nitrobenzene (Oil of Mirbane)	H	2,4,6-Trichlorophenol
	o-Nitrophenol (NOT F039)	1	2,4,5-Trichlorophenoxyacetic Acid (2,4,3-7)
	p-Nitrophenol	1	1,2,3-Trichloropropene
	2-Nitropropane (NOT UNIVERSAL TREATMENT STANDARD)	1	1,1,2-Trichloro-1,2,2-Triffuoroethane (CFC-113 or
	E. V. VIII. SERVED TO SERVED STATE OF SERVED S		· Fluorocarbon 113 or
		1	· Freon 113)
	N-Nitrosodi-n-Butylamine	<del> </del>	Tris-(2,3-Dibromopropyl) Phosphate
		-l	Vanadium
	N-Nitrosodiethylamine		11
	N-Nitrosodimethylamine (Dimethylnitrosamine)		Vinyl chloride (Chloroethene or Chloroethylene)
	N-Nitrosomethylethylamine	1	Xylono(s) (Total) (o-Xylene, m-Xylene, and p-Xylene)
		_1	(Dimethylbenzene)
	N-Nitrosomorpholine		Zine INOT FO39 AND NOT UNDERLYING
			HAZARDOUS CONSTITUENT IN 'D'-WASTES)

AGE \_\_\_\_ OF \_\_\_ [DECEMBER 19, 1994]

**ソソガン 4 3 L サッ** CALIFORNIA, CALI 1-800-852-7550

CENTER 1-800-424-8802: WITHIN

,,,

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESP

#### See Instructions on back of page 6.

Department of Toxic Substances Cantral

		11.0							Socramenta, C	alitarnia
Ì	UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's	US EPA ID No.   13   13   14   15   2		ifest Documen	t No.	2. Page 1		on in the shade Juired by Feder	
l	3. Generator's Name and Mailing Address				1413	A. State	of Of Manifest Dacument N	Number	~ ~ ~ •	010
	CRYSTAL TECHNOLOGY INC 1940 E MEADOY CIRCLE						Manifest Dacument N	<u> </u>	<u> </u>	319
	PALD ALTO, CA 94303 4. Generator's Phane ( 550 354-0158 CA	antante il Mi	Manager .			B. State (	Generatar's ID			ı
	5. Transporter 1 Campany Name	511+116Cc 3C 1G1	6. US EPA ID N	lumber		C. State	ransparter's ID [Res	erved.]	75-1/-	
	RONIC ENVIRONMENTAL TECH.		C A 0 0	0   9   4   5   2	: 6, 5, 7	D. Transp	oorter's Phone	(650)32	4-1638	
	7. Transporter 2 Compony Name		8. US EPA ID N	lumber		E. State T	ransporter's ID [Rese	erved.]		
						F. Transp	arter's Phone			
	9. Designated Facility Name and Site Address		10. US EPA ID N	lumber		G. State	acility's ID	9   4   5	1 21 61 50	7,
	ROBIC ENVIRONMENTAL TECH 2001 BAY ROAD EAST PALO ALTO, EA 94202		0 4 9 0	9   9   4   5   9	5 5 7	H. Facilit	/- Ph	(650)32	4-1638	
	11. US DOT Description (including Proper Shipp	ping Nome, Hozard	Class, and ID Numb	er)	12. Cor		13. Tatal	14. Unit	1	
	o PASTE PLANNABLE LIBRIDS, A.		*		No.	Туре	Quantity	Wt/Vol	1. Waste No	
;	(ACZTORZ, HETHARCL)		Prfl# 2 00983	1 2953 128	OWI	77 M	910161212	G	EPA/Other	212 0001
1	6 VASTE BYDROFCRANC ACID, SON REMOTH 3 BM1790 II	LOTICA, AUT AL		ACENT 51	1 Aug 1 Aug 1 7				State	
•	VEHICLE OF CHILD AT		n_414 0 00000	9 ERG# 157	2003	7015	المراز المراج		EPA/Other	791
١	a vaste putaesium avorumide,	ALLO MONTO TAL	Pril# 8 01763 814 11	3 210 <del>4</del> 137	000	المنسأ	<u>601/1612</u>	(5)	State	9002
2				9 PPO 161		7	سيخامير المستعابيين اسعر	/_	EPA/Other	122
	d ADA-ROZA HAZARIZUS YASTE, LI	19017	Prf1# E 30631	2 880% 124	001	مند امند	00055	<u></u>	State	0002
	(OIL, FRECH)				100 Lon 107			Januar.	EPA/Other	223
	J. Additional Descriptions for Materials Listed Al Line 11a. 274 Codes: F003 F005		Pril# E 306016	S ERG#	002	K. Handli	ng Cades far Wastes	Listed Abo	ove	NONE
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	1					с.	01	d.	0	
	15. Special Handling Instructions and Additiona	Information			24 IR	. IMEROR	ACT RESPONSE	7: (650	354-0165	
	15. Special Handling Instructions and Additiona FOR CHENCENCIES AFTER 3PH DIAL 4	108-475-1147								
	16. GENERATOR'S CERTIFICATION: I hereby d									cked,
	marked, and labeled, and are in all respect		. ,	, ,			•			
	If I am a large quantity generator, I certify practicable and that I have selected the pra and the enviranment; OR, if I am a small q available to me and that I can affard.	acticable method of t	treatment, storage, a	or disposal currentl	y available ta	me which r	ninimizes the presen	it and futur	e threat to hum	ian health
7	Printed/Typed Name Ab/1, 1 Co	PASIA	Signature	ahel	(ne	1		Ma	nth Day	Year 7
	17. Transporter 1 Acknowledgement of Receipt of Perinted Typed Name	af Materials	Signature/.		$\overline{-}$			Мо	nth Day	Year
	KOSS WADE			641 C	L Le	-	NAPP.		2013	21919
-	18. Transporter 2 Acknowledgement of Receipt of Printed/Typed Name	of Materials	Signature			A		Ма	nth Day	Year
	19. Discrepancy Indication Space									
	20. Facility Owner ar Operator Certification of a									
.	Printed/Typed Name	receipt of hazardous	s materials covered b		ept as noted in			Mo	nth Day	Year,

Raierance Humber: E 000000665

TIDE SEMBER TEKNINDER TIL ØR BLUT Didniften i Ventilben i mittenske bli Didne i mit bliger blit bliger.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good foith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Printed/Typed Name Signature Month Day Year 17. Transporter 1 Acknowledgement of Receipt of Materials Yeor Printed/Typed Name Signature Month Doy 18. Transporter 2 Acknowledgement of Receipt of Materials Month Day Yeor Printed/Typed Name Signature 19. Discrepancy Indication Space F Α C 20. Facility Owner or Operator Certification of receipt of hazordous moterials covered by this manifest except as noted in Item 19 Month Day Printed/Typed Name Signature Raigrance Jumber: E 200029525 DO NOT WRITE BELOW THIS LINE.

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**EMERGENCY** 

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#### See Instructions on back of page 6.

Department of Toxic Substances Control

Pili	in or type. Form designed for ose on eme (12-prich) typewin	· · ·							Sacromento, California
	UNIFORM HAZARDOUS	rator's US EPA ID N			nifest Documer	it No.	2. Page 1		in in the shoded areas uired by Federol law.
	WASTE MANIFEST	) 3 3 3 3 3	$\frac{3}{1}\frac{2}{1}$	) <sub>1</sub>	666	1814	1 of 2	is not requ	dired by rederor law.
ľ	3. Generator's Name and Mailing Address					A. State	Monifest Document N		
	CRYSTAL TECHNOLOGY INC							98	8886680
	1040 E MEADOW CIRCLE PALO ALTO, CA 94303					B. State (	Generator's ID		
	4. Generotor's Phone ( 650 354-0158 Contact: 1	L TOY					11111	11	
	5. Tronsporter 1 Company Name	6. US EI	PA ID Num	ber		C. State	Transporter's ID	B	-/6
	RONIC ENVIRONMENTAL TECH.	5 4 3	.0 0	9 4 5	2, 5, 5, 7	D. Transr	porter's Phane	(650)324	I-1638
ļ			PA ID Num						
	7. Transporter 2 Company Name	8. US EI	PA ID Num	ber		E. State	ransporter's ID		
						F. Transp	arter's Phane		
	9. Designated Facility Name and Site Address	10. US E	PA ID Num	ber			Facility's ID	0 4 4	2 5 5 7
ı	ROMIC ENVIRONMENTAL TECH					ļl	1 0 0 0	7 4 3	2 3 3 /
	2081 BAY ROAD	5 A 3	9 3	3 4 5	2   3   5   1	H. Focilit	y's Phone	(650)324	1-1638
}	EAST PALO ALTO, CA 94303				12 Co	ntainers	13. Total	14. Unit	T
	11. US DOT Description (including Praper Shipping Name, I		Number)		No.	Туре	Quantity	Wt/Vol	I. Waste Number
1	o vaste flammable liquids, N.J.S. 3 UR ACETONE, METHANOL)	11990 11							State 212
	Accions asianios					- M	A.A	1=	EPA/Other
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		2	*****	****		7.=			EPA/Other
-	c. MASTE CORRUSTVE LIBUID, ACIDIC, INCA	2711# E	J.1.508	ERG# 157	001	<u>'</u> المنسل	00022	<u>G</u> ,	COO2
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	MITRIC ACID)	Pril# 8	210752	7064 154	501	DIF	00055	بسي ا	EPA/Other
H	d MASTE POTASSION HYDROXIDE, SOLUTION		31013%	2887 .54	991		5-55	-	State
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r	J. Additional Descriptions for Materials Listed Above Line 11a. LPA Codes: FUG FUG			AR ARE TO S		<del>                                     </del>	ing Codes for Waste		ove
1	Line iia. Era Codes: ruuj ruuj					a.	01	b. 🕳	4
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						c.	10	d.	<b>y l</b> a ara-ara-ara-ara-ara-ara-ara-ara-ara-ar
H	15 Special Handling Instructions and Additional Information	1			24 31	. EMERG	ANCY RESPONSE	F: (630)	354-0165
	15. Special Handling Instructions and Additional Information FCR EMERGENCIES AFTER 3PA DIAL ICB-475-1	.147							
r	16. GENERATOR'S CERTIFICATION: I hereby declare that the	ne contents of this cor	nsignment	are fully and a	curotely descr	ibed obove	by proper shipping n	ame and ar	e classified, packed,
	morked, and labeled, and are in all respects in proper	condition far transpo	ort by high	way according	to applicable	internation	al and national gove	rnment regu	plations.
	If I am a large quantity generator, I certify that I have	a program in place	to reduce	the volume an	d toxicity of w	aste genera	ited to the degree I	have determ	nined to be economically
	practicable and that I have selected the practicable met and the environment; OR, if I am a small quantity gene	thad of treatment, sto erator, I have made	orage, or a a goad fai	lisposal curren th effort to mi	tly available to nimize my was	o me which te generatio	minimizes the presei on and select the bes	nt and futur st waste ma	e threat to human health nagement method that is
	available to me and that I can afford.				10		7		
	Printed/Typed Nome 4hail (04-6	Sign	nature	ale	11/2	4		, M°	nth Z Doy 19 Year
+	17. Transporter 1 Acknowledgement of Receipt of Materials	:						10	/ / /
	Printed/Typed Name	Sign	nature	(a 1 1	. 7	1	****	Mo	nth Day Year
	Fich Chale		_ ` <del>``</del>	عمايت	ر خ	5°		2	72277
	18. Transporter 2 Acknowledgement of Receipt of Materials							7	nth Day Year
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DO NOT WRITE BELOW THIS LINE.

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**36860 DU**CENTER 1-800-424-8802: WITHIN CALIFORNIA, CALL 1-800-852-7550

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IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESF

A	ι	INIFO	ORM HAZARDOUS	21. Generator's US EPA ID No.	Manifest Docum	ent No.	22. Pa	ge Informat	ion in th	ne shaded	
ľ			STE MANIFEST		8610				not req	uired by Fede	eral
П	_	<u> </u>	tinuation Sheet)	CAD980882369	8668	0	2 of				
1	23.		ator's Name				L. State	e Manifest Doci			
П		CRYS	FAL TECHNOLOGY INC E NEADOW CIRCLE				M Stat	te Generator's I		480	
		PALO	ALTO, CA 94303 Phone: 650 354-015				IVI, SIAI	ie Generators i	U		
	24.	Trans	porter Company Nam	ne Contact: AL TOY 25.	US EPA ID Number	-	N. Stat	e Transporter's	ID		
Ш				Į				nsporter's Phon			
П	26.	Trans	porter Company Nam	ne 27.	US EPA ID Number			e Transporter's			
								nsporter's Phon			
	28.		OT Description (Including F	Proper Shipping Name, Hazard Class, a	and ID Number)	9. Conta No.	Type	30. Total	31. Unit Wt/Vol	R. Waste N	о.
	a.	НМ	NON-RCRA HAZARDOUS WAS	STE. LIQUID		NO.	туре	Quantity	VVUVOI	CA: 2	23
			(OIL, FREON)								
				Prf1# E 30631	5 ERG#	201	DF]	00055	6	EPA: N	UNE
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	S	Additio	nal Descriptions for Materi	als Listed Above		A ( 1,0034 )	T. Han	dling Codes for	Wastes	Listed Above	<u> </u>
				Craw III				- 01			
	Ϋ́.,							•			
	22	Specie	al Handling Instructions an	nd Additional Information					1550	\0F4 015F	
	JZ.	opecia	ai rianding mandellona an	a Additional mormation	2	4 HK. E	.nekuen	CY RESPONSE #	: (530	1334-0163	
*											
T	33.			ement of Receipt of Materials						Date Day	Year
AN		Printe	ed/Typed Name	Sig	nature					Month Day	l ear
TRANSPORTER	34	Trans	porter Acknowledg	gement of Receipt of Materials				.,		Date	<u> </u>
Ř			d/Typed Name	The state of the s	nature					Month Day	Year
R			- '								<u> </u>
FA	35.	Discr	epancy Indication Space							-	
FACILIT											
ţ											

# HAZARDOUS WASTE Cradle to Grave Responsibility

# Acknowledgement of Training

I, the undersigned, acknowledge that on (date) 5-11-99
I attended a training session at the following facility:
(company/facility name) CTI
(address) 1040 E. MEADOW CIRCLE
(trainer's name) _ AL ToY
This training session presented information on hazardous waste management and hazardous waste minimization.
During this session, I viewed the following video program(s), check one or both:
HAZARDOUS WASTE  Cradle to Grave Responsibility—Unit 1: Life Cycle
HAZARDOUS WASTE  Cradle to Grave Responsibility—Unit 2: Action and Reaction
<b>Unit 1</b> presented general definitions of solid waste and hazardous waste, general handling guidelines, and regulations and recommended practices regarding generation, accumulation and shipment of hazardous wastes.
<b>Unit 2</b> covered emergency preparedness and response for incidents involving hazardous waste and hazardous waste minimization.
I was given adequate time to ask questions about my particular job activities and how I can best conduct them in compliance with applicable hazardous waste regulations.
(signature): May Brawn
(department) ¥ 1820, 1830

#### Hazardous Material Waste Storage Inspection

Month: Jan 98
Inspected by: A. Comsul

Week Ending: 1/9/98	1040	1051 Solv.	<u>1051</u>
1.Sump Integrity intact?			
	ØN ØN	ON	Ø <sub>N</sub>
<ul><li>2.Floor clean and free of cracks, deterioration and spills?</li><li>3. Wall and fences ,roof s intact?</li></ul>	ØN	Ø N	Ø <sub>N</sub>
	Ø N	Ø N	Q N
4. Drums free of leakage and/or deterioration? 5.Drums properly labeled w/ bungs in place?	AN AN	Ø N	Ø N
6. Chemicals properly segregated?	Q N	ØN	Ø N
7. Spill and safety equipment available?	Ø N	Ø N	ØN.
Aspin and safety equipment available:	Qr N	ØN	Ø N
Week Ending: 1/16/98	10.40		
Zhung.	<u>1040</u>	1051 Solv.	<u>1051</u>
1.Sump Integrity intact?	Øn Øn	89 N	$Q_N$
2.Floor clean and free of cracks, deterioration and spills?	Øn	ØN	QN
3. Wall and fences ,roof s intact?	Ø N Ø N	Ø N	Ø N
4. Drums free of leakage and/or deterioration?	$\mathcal{Q}$ N	QN	ØN
5.Drums properly labeled w/ bungs in place?	69 N	ØΝ	Ø N
6. Chemicals properly segregated?	Ø N Ø N	Ø N	Ø N
7. Spill and safety equipment available?	ÖΝ	Ø N	(Y)N
Week Ending: 1/23/8  1.Sump Integrity intact?  2.Floor clean and free of cracks, deterioration and spills?	1040 Q n Q n	<u>1051 Solv</u> . <b>⊘</b> N <b>⊘</b> N	1051 Q N Q N
3. Wall and fences, roof s intact?	ØN	άN	Q'N
4. Drums free of leakage and/or deterioration?	Ø N	Ø N	Q'N
5.Drums properly labeled w/ bungs in place?	Ø N	ØN	ØΝ
6. Chemicals properly segregated?	ÔN.	Ø N	Ø N
7.Spill and safety equipment available?	ØN	(Q N	ON
			· · · · · · · · · · · · · · · · · · ·
Week Ending: 1/32/95	<u>1040</u>	1051 Solv.	<u>1051</u>
1.Sump Integrity intact?	$\mathcal{Q}_{N}$	Á N	QN
2. Floor clean and free of cracks, deterioration and spills?	A N	Q N	ØN
3. Wall and fences ,roof s intact?	ďΝ	QN	Ø N
4. Drums free of leakage and/or deterioration?	Ø N	Q N	ØN ØN
5.Drums properly labeled w/ bungs in place?	QΫ́N	Ø N	$\mathcal{Q}_{N}$
6. Chemicals properly segregated?	QΝ	Ø N	Q N
7. Spill and safety equipment available?	ØN	ØΝ	⊗N

COMMENTS:	Jan	98-	Cleaned	<u>t</u>	organized	sheds.	_
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#### Hazardous Material Waste Storage Inspection

Month: JAN 99 Inspected by: A.C.

Week Ending: 1/10/99	1040	1051 Solv.	<u>1051</u>
1.Sump Integrity intact?	AN	<b>y</b> N	#/ N
2. Floor clean and free of cracks, deterioration and spills?	XN	X N	X N X N
3. Wall and fences, roof s intact?	XN	N N N N	XN
4. Drums free of leakage and/or deterioration?	NX	NN	XN
5.Drums properly labeled w/ bungs in place?	ΥN	XN	XN
6. Chemicals properly segregated?	ΑŊ	A N	XN
7.Spill and safety equipment available?	ΝN	× N	/Y N
Week Ending: 1/17/99	1040	1051 0 1	
, ,	1040	1051 Solv.	<u>1051</u>
1.Sump Integrity intact?	XN	VeN	V X
2. Floor clean and free of cracks, deterioration and spills?	ΧN	YN XN	X N X N
3. Wall and fences, roof s intact?	Y'N	XN	X'N
4. Drums free of leakage and/or deterioration?	Y'N X N	XN	XN
5. Drums properly labeled w/ bungs in place?	ΧN	XN	XN
6. Chemicals properly segregated?	ΥN	<b>ZY</b> N	ΧN
7.Spill and safety equipment available?	'Y'N	XN	Ϋ́N
Week Ending: 1/24/11	1040	1051 Solv.	<u>1051</u>
1.Sump Integrity intact?	Y N X N	УN	AN AN
<ul><li>2.Floor clean and free of cracks, deterioration and spills?</li><li>3. Wall and fences ,roof s intact?</li></ul>	Y N	N K N K	Y'N
4. Drums free of leakage and/or deterioration?	X N	YN	XN
5.Drums properly labeled w/ bungs in place?	N X N X	XN XN	XN
6. Chemicals properly segregated?	χN	УN	χN
7.Spill and safety equipment available?	ΝX	ÝΝ	Y'N
<del></del>			
Week Ending: 1/31 49	1040	<u>1051 Solv</u> .	1051
1.Sump Integrity intact?	X N	XN	XN
2. Floor clean and free of cracks, deterioration and spills?	XN	×Ν	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z
3. Wall and fences ,roof s intact?	X-N	AN	ΥN
4. Drums free of leakage and/or deterioration?	XN	*N	N
5.Drums properly labeled w/ bungs in place?	XN	N	YN
6. Chemicals properly segregated?	XN	XN	Y N
7.Spill and safety equipment available?	XN	XN	YN

COMMENTS: DTSC	Inspection	1-13-99			-
					-
			 	·	_
					_



February 23, 1998

**DTSC** 

Attn: Biennial Report Staff P.O. Box 806 Sacramento, CA 95812-0806

To Whom It May Concern:

Enclosed, please find our 1997 Hazardous Waste Report on a 3.5" disk, along with a hard copy that includes a signed form "IC."

Please feel free to contact me at (650) 354-0165 if you have questions, or if I may be of assistance. Thank you.

Sincerely,

Al Toy,

EH&S Manager

SITE NAME: CRYSTAL TECHNOLOGY, INC.

EPA ID NO: CAD980882369



U.S. ENVIRONMENTAL PROTECTION AGENCY

1997 Hazardous Waste Report

# IDENTIFICATION AND CERTIFICATION

Instructions: Please see the detailed instructions beginning on page 7 of the instructions and forms booklet before completing this form. In addition, the page number for the instructions specific to each section is provided below.

Sec. II Site name and location address. Instructions page 7.  A. EPAID No.  CAD980882369  C. Sitelcompany name  CRYSTAL TECHNOLOGY, INC.  E. Street name and number. If not applicable, enter industrial park, building name or other physical location description.  1040 East Meadow Circle  F. City, town, village  Palo Alto  G. State  H. Zip Code  94303  Sec. II Mailing address of site. Instructions page 7.  A. Is the mailing address the same as the location address?  X 1 Yes (SKIP TO SEC III)  2 No (GO TO BOX B)  B. Number and street name of mailing address  1040 East Meadow Circle  C. City, town, village  Palo Alto  D. State  E. Zip Code  94303  Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page  A. Last Name  First Name  M.I. B. Title  C. Telephone Number					
CAD980882369 C. Site/company name CRYSTAL TECHNOLOGY, INC.  E. Street name and number. If not applicable, enter industrial park, building name or other physical location description.  1040 East Meadow Circle F. City, town, village Palo Alto  G. State H. Zip Code Palo Alto  CA  GO TO BOX B)  B. Number and street name of mailing address  1040 East Meadow Circle C. City, town, village D. State E. Zip Code Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page 7.	Sec. I Site name and location address. Instructions page 7.				
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CRYSTAL TECHNOLOGY, INC.  E. Street name and number. If not applicable, enter industrial park, building name or other physical location description.  1040 East Meadow Circle  F. City, town, village Palo Alto  G. State H. Zip Code Palo Alto  CA  94303  Sec. II  Mailing address of site. Instructions page 7.  X 1 Yes (SKIP TO SEC III)  2 No (GO TO BOX B)  B. Number and street name of mailing address  1040 East Meadow Circle C. City, town, village Palo Alto  D. State E. Zip Code Palo Alto  Sec. III  Name, tittle, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page	CAD980882369	San	ta Clara		
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1040 East Meadow Circle  F. City, town, village Palo Alto CA 94303  Sec. II Mailing address of site. Instructions page 7.  A. Is the mailing address the same as the location address?  X 1 Yes (SKIP TO SEC III) 2 No (GO TO BOX B)  B. Number and street name of mailing address  1040 East Meadow Circle C. City, town, village Palo Alto CA 94303  Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page			1 1		
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Palo Alto  CA 94303  Sec. II Mailing address of site. Instructions page 7.  A. Is the mailing address the same as the location address?  X 1 Yes (SKIP TO SEC III)		04-4-	[II 7in 0ada		
Sec. II Mailing address of site. Instructions page 7.  A. Is the mailing address the same as the location address?  X 1 Yes (SKIP TO SEC III)	F. City, town, village	State	n. Zip Code		
A. Is the mailing address the same as the location address?    X   1   Yes   (SKIP TO SEC III)     2   No   (GO TO BOX B)	Palo Alto	CA	94303		
A. Is the mailing address the same as the location address?    X   1   Yes   (SKIP TO SEC III)     2   No   (GO TO BOX B)					
X 1 Yes (SKIP TO SEC III)	Sec_II Mailing address of site. Instructions page 7.				
B. Number and street name of mailing address  1040 East Meadow Circle C. City, town, village  Palo Alto  CA  94303  Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page	A. Is the mailing address the same as the location address?				
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C. City, town, village  Palo Alto  CA  94303  Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page	B. Number and street name of mailing address				
C. City, town, village  Palo Alto  CA  94303  Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page	1040 Fast Meadow Circle				
Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page		State	E. Zip Code		
Sec. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instructions page	Palo Alto	CA	94303		
A. Last Name First Name M.I. B. Title C. Telephone Number	Sec. III Name, title, and telephone number of the person who s	should be contacted	if questions arise regarding	this report. Instructions page 7.	
	A. Last Name First Name M.I. B.	Title		C. Telephone Number	
Toy, Albert W. EH&S Manager 650 354-0165 Ext.	Toy, Albert W.	EH&S Manager		650 354-0165 Ext.	
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties under Section 3008 of the Resource Conserva and Recovery Act for submitting false information, including the possibility of fine and imprisonment for knowing violations." Instructions page 8.  A. Last Name  First Name  M.I.  B. Title  Toy, Albert W.	designed to assure that qualified personnel properly gather at who manage the system, or those persons directly responsible knowledge and belief, true, accurate, and complete. I am award and Recovery Act for submitting false information, including the A. Last Name  A. Last Name  M.I.	and evaluate the inform ole for gathering the inform vare that there are sign the possibility of fine a B. Title	ation submitted. Based on my ormation, the information submiticant penalties under Section and imprisonment for knowing value.	r inquiry of the person or persons nitted is, to the best of my 3008 of the Resource Conservation	
C. Signature  D. Date of signature  O 2 2 3 9 8  MO. DAY YR.		D. Date	02		

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EPA ID NO. CAD980882369

Sec. V Generator status. Instructions begin on page 8.					
A. 1997 RCRA generator status  (CHECK ONE BOX BELOW)  (CHECK ALL THAT APPLY)  1 Never generated  2 SQG  SKIP TO SEC. VI  3 CESQG  4 Non-generator (Continue to Box B)  5 Periodic or occasional generator  6 Waste minimization activity  7 Other (SPECIFY COMMENTS IN BOX BELOW)					
Sec. VI On-site waste management status. Inst					
A. Storage subject to RCRA permitting requirements  B. Treatment, disposal, or recycling subject to RCRA permitting requirements  1					
Comments:					

SITE NAME: CRYSTAL TECHNOLOGY, I	INC.	The state of the s	U. S. ENVIRONING PROTECTION A  97 HAZARDOUS WAS	GENCY
EPA ID NO: <u>CAD980882369</u>		FORM GM	WASTE GENER	RATION
Instructions: Please see the detailed instruction addition, the page number for instructions spe			ms booklet before comple	ting this form. In
A. Waste description (page 12)  Sec. 1 Photoresist stripper used to remove sodium silicate (1-5%).	ve photoresist from crysta	als; mixture of water (85-	90%), sodium phosphate	e (5-10%) and
B. EPA hazardous waste codes (page 12) D002 NA NA	NA NA	C. State hazardous waste CA 122	e codes (page 13)	
D. SIC code (page 13) 1 1 System type	F. Source code (page 14) A03	G. Point of measurement (p. 14)	H. Form code (page 14) B110	I. RCRA-radioactive mixed (page 14) 2
a constitution of the second of 1907 (page 4)	ed D. HOM (none 46)	la Didutia sita da any af	the fellowing to this waste	44
Sec. II. 165.00				
	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity t	reated, disposed, or site in 1997 (page 16)
A. Was any of this waste shipped off s  Sec. III.  X 1 Yes (CONTINUE TO BOX E	<del></del>	isposal, or recycling? (pag M IS COMPLETE)	e 17)	
shipped to (page 17) CAD009452657	C. System type shipped to (page 17) M121	D. Off-site availability code (page 17) 1	E. Total quantity shipped	00
shipped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped	
Site 3 B. EPA ID No. of facility waste was shipped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped	d in 1997 (page 17)
Comments:				

FORM GM

FORM GM				
SITE NAME: CRYSTAL TECHNOLOGY, I	NC.	The State of	U. S. ENVIRONN PROTECTION A	
EPA ID NO: CAD980882369		FORM 199	7 HAZARDOUS WAS	STE REPORT
		GM	WASTE GENER AND MANAGE	
Instructions: Please see the detailed instruction addition, the page number for instructions specified			ns booklet before comple	eting this form. In
A. Waste description (page 12)  Sec. I. Mixed non-halogenated solvents for alcohol (1-10%), ethanol (0-1%) a			e (50-75%), methanol (	5-20%), isopropyl
B. EPA hazardous waste codes (page 12) D001 D021 F003	F005 NA	C. State hazardous waste CA 212	codes (page 13)	
D. SIC code (page 13) 1 1 System type	F. Source code (page 14) A05	G. Point of measurement (p. 14)	H. Form code (page 14) B203	I. RCRA-radioactive mixed (page 14) 2
A. Quantity generated in 1997 (page 15) Sec. II  1,645.00  Density 0.80  ( ) 1 lbs/gal (X) 2 sg  A. Quantity generated in 1997 (page 15)  5  C. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? (page 15)  1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)  X 2 No (SKIP TO SEC. III)				a
	tity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or n site in 1997 (page 16)
A. Was any of this waste shipped off site in 1997 for treatment, disposal, or recycling? (page 17)  Sec. III X 1 Yes (CONTINUE TO BOX B) 2 No (FORM IS COMPLETE)				
Site 1 B. EPA ID No. of facility waste was shipped to (page 17) CAD009452657	C. System type shipped to (page 17) M021	D. Off-site availability code (page 17) 1	E. Total quantity shippe	
Site 2 B. EPA ID No. of facility waste was shipped to (page 17)  NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Site 3 B. EPA ID No. of facility waste was shipped to (page 17)  NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Comments:				

FORM GM				
SITE NAME: CRYSTAL TECHNOLOGY, I	NC.	Secretary Secret	U. S. ENVIRONI PROTECTION A	
EPA ID NO: CAD980882369		FORM 199	97 HAZARDOUS WAS	STE REPORT
		GM	WASTE GENER	
Instructions: Please see the detailed instruction addition, the page number for instructions specified.			ns booklet before comple	eting this form. In
A. Waste description (page 12)  mixed non-halogenated solvent/wa alcohol (0-1%), methanol (0-1%) a		e of solvent containers; v	vater (96-100%), aceton	e (0-1%), isopropyl
B. EPA hazardous waste codes (page 12) F003 NA NA	NA NA	C. State hazardous waste CA 212	codes (page 13)	
D. SIC code (page 13) (page 13) 1 1 System type	F. Source code (page 14) A04	G. Point of measurement (p. 14)	H. Form code (page 14) B101	I. RCRA-radioactive mixed (page 14) 2
A. Quantity generated in 1997 (page 19	5) B. UOM (page 15) 5 Density 1.00 ( ) 1 lbs/gal ( X ) 2 sg	dispose on site, recycl sewer/POTW? (page 1	IUE TO ON-SITE PROCESS	a
	tity treated, disposed, or d on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or n site in 1997 (page 16
A. Was any of this waste shipped off s  Sec. III  X 1 Yes (CONTINUE TO BOX E		isposal, or recycling? (pag M IS COMPLETE)	e 17)	
Site 1 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
CAD009452657	M021 C. System type shipped to (page 17)	D. Off-site availability code (page 17)	405 E. Total quantity shippe	
NA Site 3 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
NA Comments:				

FORM GM				
SITE NAME: CRYSTAL TECHNOLOGY,	INC.	Arminal Co States	U. S. ENVIRONI PROTECTION A	
EPA ID NO: <u>CAD980882369</u>		FORM 19	97 HAZARDOUS WA	STE REPORT
		GM	WASTE GENER AND MANAGE	
Instructions: Please see the detailed instruction addition, the page number for instructions spe			ms booklet before compl	eting this form. In
A. Waste description (page 12)  Sec. I  Waste hydrofluoric acid rinse wat	er from wafer etching; wa	ater (80-99%) and hydrof	luoric acid (1-20%)	
B. EPA hazardous waste codes (page 12) D002 NA NA	NA NA	C. State hazardous waste CA 791	codes (page 13)	
D. SIC code (page 13) (page 13) 1 System type	F. Source code (page 14) A27	G. Point of measurement (p. 14)	H. Form code (page 14) B105	I. RCRA-radioactive mixed (page 14) 2
A. Quantity generated in 1997 (page 1	5) B. UOM (page 15) 5 Density 1.10 ( ) 1 lbs/gal ( X ) 2 sg	dispose on site, recyc sew <u>er/</u> POTW? (page	IUE TO ON-SITE PROCES	a
	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quantity	treated, disposed, or n site in 1997 (page 16)
A. Was any of this waste shipped off :  X 1 Yes (CONTINUE TO BOX I		lisposal, or recycling? (pag RM IS COMPLETE)	e 17)	
Site 1 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
CAD009452657	M121	1	3,14	
Site 2 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
NA Site 3 B. EPA ID No. of facility waste was shipped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Comments:				

FORM GM					····
SITE NAME: CRYS	STAL TECHNOLOGY,	INC.	A STANFA	U. S. ENVIRONI PROTECTION A	
EPA ID NO: CAD9	80882369		199	97 HAZARDOUS WAS	STE REPORT
EPAIDING. <u>GADO</u>			GM	WASTE GENER	
	Instructions: Please see the detailed instructions beginning on page 11 of the instructions and forms booklet before completing this form. In addition, the page number for instructions specific to each box is provided in parentheses.				
Sec. I Mixed hy nitric acid	d (1-10%)	acid aqueos waste from	boule etching; water (80-		(1-10%) and/or
B. EPA hazardous w D002	raste codes (page 12) NA NA	NA NA	C. State hazardous waste CA 791	codes (page 13)	
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A27	G. Point of measurement (p. 14)	H. Form code (page 14) B105	i. RCRA-radioactive mixed (page 14) 2
A. Quantity generated in 1997 (page 15)  Sec. II  495.00  B. UOM (page 15)  5  Density  1.10  ( ) 1 lbs/gal ( X ) 2 sg  C. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? (page 15)  1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)			1		
On-site proces	ON-SITE PROCESS SYSTEM 1 On-site process system type (page 16) Onumber (page 16) ON-SITE PROCESS SYSTEM 2 Onumber Onumber Onumber (page 16) ON-SITE PROCESS SYSTEM 2 Onumber O				
81379407914444079874	y of this waste shipped off 1 Yes (CONTINUE TO BOX	<del></del>	lisposal, or recycling? (pag MM IS COMPLETE)	e 17)	
shipp	O No. of facility waste was bed to (page 17) CAD009452657	C. System type shipped to (page 17) M121	D. Off-site availability code (page 17)	E. Total quantity shippe	
Site 2 B. EPA II	O No. of facility waste was bed to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
	D No. of facility waste was bed to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Comments:					

FORM GM				
SITE NAME: CRYSTAL TECHNOLOGY,	INC.	A CONTROL STREET	U. S. ENVIRONING PROTECTION A	<del>-</del>
EPA ID NO: CAD980882369		FORM 19	97 HAZARDOUS WAS	STE REPORT
GM WASTE GENERATION AND MANAGEMENT				
Instructions: Please see the detailed instructions beginning on page 11 of the instructions and forms booklet before completing this form. In addition, the page number for instructions specific to each box is provided in parentheses.				
A. Waste description (page 12)  Sec. I. Spent vapor degreaser fluid (HCFC) used for cleaning crystals; Dichlorofluroethane (90-99%), methanol (0-10%), oil (0-1%) and water (0-1%).				
B. EPA hazardous waste codes (page 12) F001 F003 NA	NA NA	C. State hazardous waste CA 741	e codes (page 13)	
D. SIC code (page 13) (page 13) 1 3679 System type	F. Source code (page 14) A07	G. Point of measurement (p. 14)	H. Form code (page 14) B202	I. RCRA-radioactive mixed (page 14) 2
Sec: II  A. Quantity generated in 1997 (page 15)  B. UOM (page 15)  5  Density  1.30  ( ) 1 lbs/gal ( X) 2 sg  C. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? (page 15)  1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)  X 2 No (SKIP TO SEC. III)				1
	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	stem type Quantity	treated, disposed, or n site in 1997 (page 16)
Sec. III. X 1 Yes (CONTINUE TO BOX		isposal, or recycling? (pag M IS COMPLETE)	ge 17)	
Site 1 B. EPA ID No. of facility waste was shipped to (page 17) CAD009452657	C. System type shipped to (page 17) M021	D. Off-site availability code (page 17)	E. Total quantity shipped	,
Site 2 B. EPA ID No. of facility waste was shipped to (page 17)  NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
Site 3 B. EPA ID No. of facility waste was shipped to (page 17)  NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped	d in 1997 (page 17)
Comments:				

SITE NAME: CRYSTAL TECHNOLOGY, INC.

EPA ID NO: CAD980882369



# U. S. ENVIRONMENTAL PROTECTION AGENCY

FORM **GM** 

1997 HAZARDOUS WASTE REPORT

# WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions beginning on page 11 of the instructions and forms booklet before completing this form. In addition, the page number for instructions specific to each box is provided in parentheses.

Sec_f Flammal methano	oi (0-10%).	leaning of crystals; debris			(0-10%) and
B. EPA hazardous w F003	vaste codes (page 12) NA NA	NA NA	C. State hazardous waste CA 352	e codes (page 13)	
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A19	G. Point of measurement (p. 14)	H. Form code (page 14) B409	I. RCRA-radioactive mixed (page 14) 2
A. Quantity generated in 1997 (page 15) B. UOM (page 15)  1 1,255.00  Density  NA  C. Did this site do any of the following to this waste: treat on sit dispose on site, recycle on site, or discharge to a sewer/POTW? (page 15)  1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)  X 2 No (SKIP TO SEC. III)					a
ON-SITE PROCESS SYSTEM 1 On-site process system type Quantity treated, disposed, or (page 16) recycled on site in 1997 (page 16) ON-SITE PROCESS SYSTEM 2 On-site process system type Quantity treated, disposed, or (page 16) recycled on site in 1997 (page 16)					
	y of this waste shipped off 1 Yes (CONTINUE TO BOX	site in 1997 for treatment, di B) 2 No (FOR	isposal, or recycling? (page M IS COMPLETE)	e 17)	
shipp	O No. of facility waste was ped to (page 17) CAD009452657	C. System type shipped to (page 17) M043	D. Off-site availability code (page 17)	E. Total quantity shippe	
Site 2 B. EPA II	D No. of facility waste was bed to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	
	O No. of facility waste was ped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Comments: Cotton wipes a	and wood handle cotton swab	s used for hand wipe cleaning	of crystals.		
EPA Form 870051840	/B (Revised (07-97))				Page /

FORM GM				
SITE NAME: CRYSTAL TECHNOLOGY,	INC.	A COSTONES	U. S. ENVIRONI PROTECTION A	
EPA ID NO: CAD980882369		FORM 199	97 HAZARDOUS WAS	STE REPORT
EFA ID NO. <u>CAD 90002309</u>		GM	WASTE GENER	
Instructions: Please see the detailed instruction addition, the page number for instructions spe			ns booklet before comple	eting this form. In
A. Waste description (page 12)  Sec. I: Hydrofluoric acid wastewater neu	utralization unit used for e	tching crystals; water (99	-100%) and hydrofluoric	acid (0-1%).
B. EPA hazardous waste codes (page 12) D002 NA NA	NA NA	C. State hazardous waste CA 791	codes (page 13)	
D. SIC code (page 13) (page 13) 1 System type	F. Source code (page 14) A27	G. Point of measurement (p. 14)	H. Form code (page 14) B105	I. RCRA-radioactive mixed (page 14) 2
A. Quantity generated in 1997 (page 15)  Sec. II  4.00  B. UOM (page 15)  5  Density  1.10  ( ) 1 lbs/gal ( X ) 2 sg  C. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? (page 15)  X 1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)  2 No (SKIP TO SEC. III)			1	
	ntity treated, disposed, or led on site in 1997 (page 16) 4.00	ON-SITE PROCESS SYST On-site process sys (page 16) NA	tem type Quantity	treated, disposed, or n site in 1997 (page 16)
A. Was any of this waste shipped off	aita in 4007 for treatment d	lianoad or reguling? (name	. 47)	
Sec_III 1 Yes (CONTINUE TO BOX		RM IS COMPLETE)	= 17)	
Site 1 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Site 2 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shippe	d in 1997 (page 17)
Site 3 B. EPA ID No. of facility waste was shipped to (page 17)	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped	d in 1997 (page 17)
Commenter		1		
Comments:				

	GM

Sec. I

SITE NAME: CRYSTAL TECHNOLOGY, INC.

A. Waste description (page 12)
Lab packs of misc. chemicals.

EPA ID NO: <u>CAD980882369</u>



# U. S. ENVIRONMENTAL PROTECTION AGENCY

FORM **GM** 

1997 HAZARDOUS WASTE REPORT

# WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions beginning on page 11 of the instructions and forms booklet before completing this form. In addition, the page number for instructions specific to each box is provided in parentheses.

D001	D002 D018	NA NA	CA 551	CA 791	
O. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A99	G. Point of measurement (p. 14)	H. Form code (page 14) B001	I. RCRA-radioactive mixed (page 14) 2
A. Qua Sec. li	ntity generated in 1997 (page 1 1,605.00	5) B. UOM (page 15) 1 Density NA	sewer/POTW? (page 1	e on site, or discharge t 5) IUE TO ON-SITE PROCE	to a
•	cess system type Quar	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	tem type Quanti	ty treated, disposed, or on site in 1997 (page 16
TO SHOW THE PARTY OF THE PARTY	any of this waste shipped off X 1 Yes (CONTINUE TO BOX	<del></del>	isposal, or recycling? (page M IS COMPLETE)	e 17)	
	PA ID No. of facility waste was hipped to (page 17)  CAD009452657	C. System type shipped to (page 17) M137	D. Off-site availability code (page 17)	E. Total quantity ship	ped in 1997 (page 17)
	PA ID No. of facility waste was hipped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity ship	ped in 1997 (page 17)
	PA ID No. of facility waste was hipped to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity ship	ped in 1997 (page 17)
Comments: LAB PACI	K OF MISC. CHEMICALS. DISP	OSAL METHODS VARIED.			
=PA Form 8700-	13A/B (Revised (07-97))				Page S

FORM GM							
SITE NAME: CRYSTAL TECHNOLOGY, INC.  EPA ID NO: CAD980882369			U. S. ENVIRONMENTAL PROTECTION AGENCY  1997 HAZARDOUS WASTE REPORT				
							EPA ID NO. <u>CADS</u>
		ons beginning on page 11 cific to each box is provid		ms booklet before compl	eting this form. In		
	escription (page 12) n hydroxide and water u	sed to clean wafers.					
	PA hazardous waste codes (page 12) D002 NA NA NA NA			C. State hazardous waste codes (page 13) CA 122			
D. SIC code (page 13) 3679	E. Origin code (page 13) 1 System type	F. Source code (page 14) A03	G. Point of measurement (p. 14)	H. Form code (page 14) B110	I. RCRA-radioactive mixed (page 14) 2		
A. Quantity generated in 1997 (page 15) B. UOM (page 15) 5  Bensity 1.00 ( ) 1 lbs/gal ( X ) 2 sg			C. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? (page 15)  1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)  X 2 No (SKIP TO SEC. III)				
ON-SITE PROCESS S On-site process (page	system type Quan	ntity treated, disposed, or ed on site in 1997 (page 16)	ON-SITE PROCESS SYST On-site process sys (page 16)	stern type Quantity	treated, disposed, or n site in 1997 (page 16		
	of this waste shipped off Yes (CONTINUE TO BOX I	site in 1997 for treatment, d	I isposal, or recycling? (pag IM IS COMPLETE)	je 17)			
shippe	shipped to (page 17)		D. Off-site availability code (page 17)	E. Total quantity shipped in 1997 (page 17) 825.00			
Site 2 B. EPA ID	CAD009452657  No. of facility waste was ed to (page 17)  NA	M121 C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped in 1997 (page 17)			
	No. of facility waste was ed to (page 17) NA	C. System type shipped to (page 17)	D. Off-site availability code (page 17)	E. Total quantity shipped in 1997 (page 17)			
Comments:							